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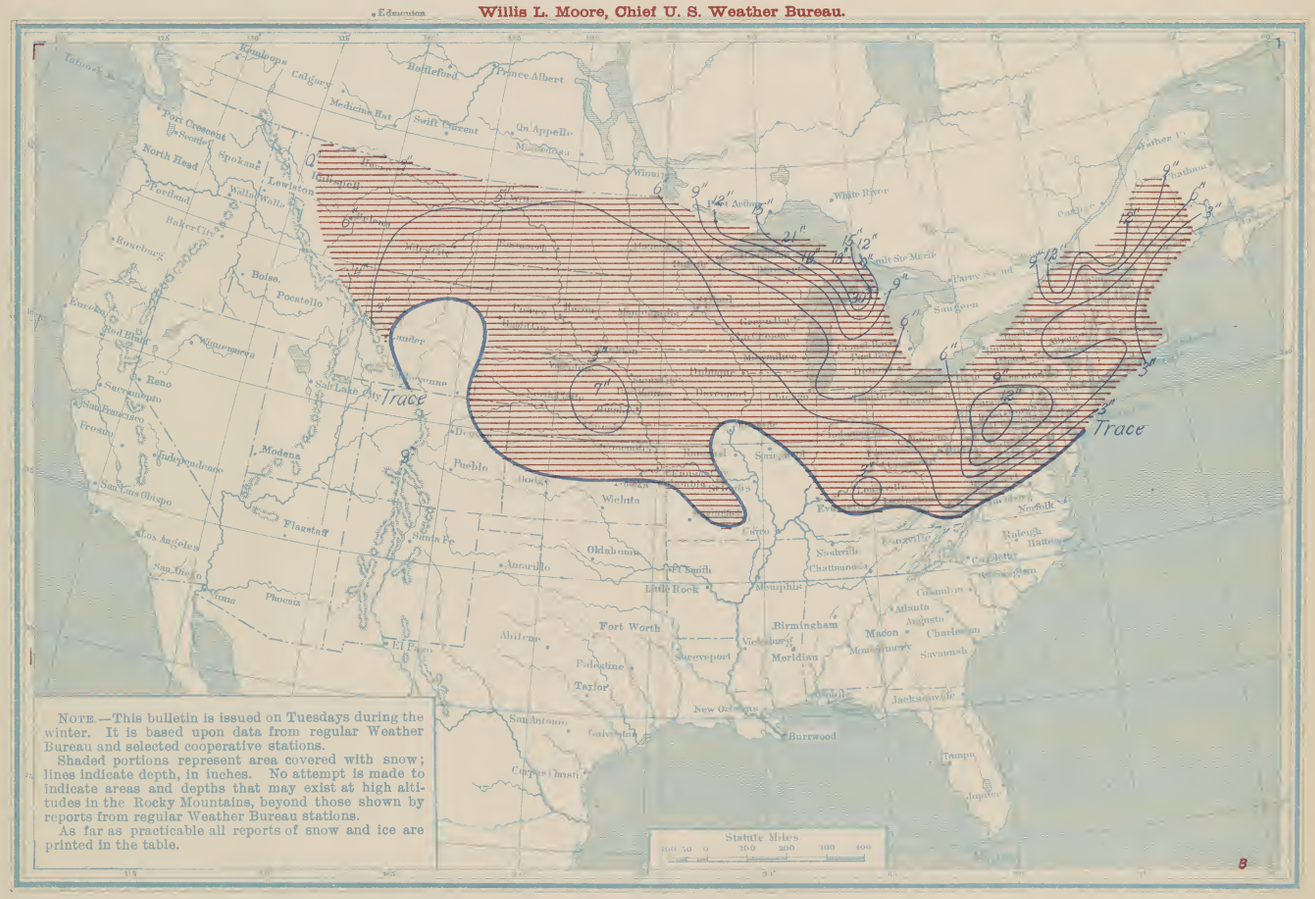
U. S. DEPARTMENT OF AGRICULTURE,
WEATHER BUREAU.

SNOW AND ICE BULLETIN.

PUBLISHED BY AUTHORITY OF THE SECRETARY OF AGRICULTURE.

Willis L. Moore, Chief U. S. Weather Bureau.



NOTE.—This bulletin is issued on Tuesdays during the winter. It is based upon data from regular Weather Bureau and selected cooperative stations.

Shaded portions represent area covered with snow; lines indicate depth, in inches. No attempt is made to indicate areas and depths that may exist at high altitudes in the Rocky Mountains, beyond those shown by reports from regular Weather Bureau stations.

As far as practicable all reports of snow and ice are printed in the table.

WASHINGTON, D. C., *December 13, 1910.*

DEPTH OF SNOW.

The storm central over northern Georgia at 8 p. m. last Monday moved off the southern New England coast by Wednesday accompanied by considerable additional snowfall over the mountains and lower elevations from West Virginia and northern Virginia to southern New England. Considerable snow occurred in the Lake region, Ohio Valley, and Middle Atlantic States during Saturday and Sunday in connection with a moderate disturbance that moved across those regions on the dates named. Aside from the above there was little snowfall reported from any portion of the country. Even in the high mountain districts of the West there appears to have been but little snow, the depth at Leadville, Colo., in the heart of the Rockies, having increased but 1 inch over the amount reported one week ago.

From 2 to 4 inches of snow disappeared during the week from the Missouri and middle Mississippi valley districts and there is now but a slight or no covering over much of those districts.

In the Lake region, upper Ohio Valley, and Middle Atlantic States, however, there is now considerably more snow than was reported last week, the excess ranging from 2 to 6 inches in the Lake region, about the same amount in the upper Ohio Valley and from 3 to 12 inches in the Middle Atlantic States.

In the mountain regions of Virginia, and over the greater part of Maryland, Pennsylvania, New York, and West Virginia the depth of snow ranges from 6 to 12 inches or more; amounts much in excess of the usual depths so early in the season.

In the upper Lake region the depths range generally from 4 to 15 inches with somewhat greater amounts in the northern portion of Michigan.

ICE IN RIVERS AND HARBORS.

The continuation of abnormally cold weather in the districts east of the Rocky Mountains caused the formation of considerable additional ice over the amounts reported last week in all northern districts.

In the Missouri River the increase ranges from 5 inches at St. Joseph, Mo., to 10.5 inches at Bismarck, N. Dak., the thickness at the last-named point now being 16 inches. In the upper Mississippi the increase ranges from 3 inches at Davenport to 5 inches at St. Paul, the maximum thickness being 9 inches.

In the Lake region there has been an increase of from 2 to 4 inches in thickness over the western portion of Lake Superior, and ice from 1 inch to 5 inches in thickness has formed over most of Lakes St. Clair, Erie, and Ontario, but in the harbors of Lakes Michigan and Huron and over the eastern end of Lake Superior no appreciable amount of ice has yet formed.

The Ohio River is mostly free of ice, but in some of its tributaries considerable amounts have formed.

Not much ice has formed in the main streams of the Atlantic coast States from the Potomac to the Hudson, but in New England the streams are mostly ice covered, the thickness ranging from 2 to 6 inches in the Connecticut and upward to nearly 15 inches in the rivers of central Maine.

The following special reports have been received:

Gardiner, Me., December 12.—The depth of snow in the Kennebec Valley is not sufficient for lumbering operations.

Hartford, Conn., December 13.—The depth of snow in the Housatonic Valley averages 1 inch; in the Connecticut Valley it ranges from 2 inches at Hartford to 6 inches at West Stewartstown and about 12 inches in the mountains. Navigation on the lower Connecticut River closed on the 11th.

Albany, N. Y., December 13.—In the Hudson Valley the depth of snow ranges from a trace at Athens to 6 inches at Thurman; in the Mohawk Valley it ranges from a trace at Schenectady to 4 inches at Utica. The ice in the Hudson River averages 3½ inches thick, while in the Mohawk it averages 4 inches.

Binghamton, N. Y., December 13.—The depth of snow in the upper Susquehanna, Unadilla, Chenango, and Tioughnioga valleys averages 5, 6, 7, and 8 inches, respectively.

Pittsburg, Pa., December 12.—The depth of snow over the Allegheny and adjacent watersheds ranges from about 3 inches over the lower Beaver Valley to 15 inches in the mountainous region near the divide. The Kiskiminetas and Youghiogheny and portions of the Allegheny and Monongahela rivers are frozen over, due to the low temperatures that prevailed during the past week.

P. C. DAY, *Chief of Division.*

DEPTH OF SNOW AND THICKNESS OF ICE AT 8 P. M., DECEMBER 12, 1910.

Stations.	Snow.	Ice in rivers, harbors, etc.
Colorado.	*Inches*	*Inches*
Leadville	9	.....
Connecticut.		
Hartford	2	2.0
New Haven	3	.....
West Cornwall	7	.....
West Simsbury	1	.....
Delaware.		
Millsboro	1	.....
District of Columbia.		
Washington	5	†
Illinois.		
Chicago	2	0.0
Dwight	2	.....
La Salle	2	†
Martinton	1	.....
Winnebago	3	.....
Indiana.		
Bloomington	2	.....
Knox	3	.....
Laporte	8	.....
Marion	2	.....
Iowa.		
Atlantic	1	.....
Davenport	1	3.0
Des Moines	0	5.5
Dubuque	2	2.0
Keokuk	0	†
Sioux City	T.	2.0
Waterloo	2	.....
Kansas.		
Iola	0	1.0
Topeka	T.	.....
Kentucky.		
Lexington	3	.....
Louisville	T.	0.0
Mount Sterling	2	.....
Maine.		
Bangor	1	8.0
Cornish	5	.....
Eastport	T.	7.0
Gardiner	4	7.0
Greenville	9	13.5
Lewiston	3	7.0
Millinocket	9	.....
Orono	2	.....
Presque Isle	7	.....
Maryland.		
Baltimore	6	†
Darlington	11	.....
Frederick	9	.....
Oakland	11	.....
Massachusetts.		
Amherst	2	.....
Boston	2	.....
Fitchburg	3	.....
Mansfield	5	.....
Nantucket	T.	0.0
Michigan.		
Alpena	10	†
Battle Creek	6	.....
Big Rapids	6	.....
Cadillac	12	.....
Calumet	21	.....
Chatham	16	.....
Detroit	5	4.5
Escanaba	6	†
Grand Haven	4	0.0
Grand Marais	18	.....
Grand Rapids	6	.....
Hillsdale	6	.....
Houghton	16	3.0
Iron River	7	.....
Lansing	7	.....
Lewiston	14	.....
Mackinaw	12	.....

Stations.	Snow.	Ice in rivers, harbors, etc.
Michigan—Cont'd.	*Inches*	*Inches*
Mancelona	30	.....
Manistee	8	.....
Marquette	18	0.0
Port Huron	5	3.5
Saginaw	6	.....
Sault Ste. Marie	9	†
South Haven	8	.....
Minnesota.		
Angus	4	.....
Duluth	7	10.0
Hinckley	2	.....
Moorhead	1	14.0
St. Paul	T.	9.0
State Sanatorium	3	.....
Virginia	14	.....
Missouri.		
Ironton	1	.....
Kansas City	T.	0.0
St. Joseph	T.	5.0
Montana.		
Havre	3	.....
Helena	6	.....
Nebraska.		
Broken Bow	1	.....
Genoa	7	.....
Imperial	1	.....
Lincoln	3	.....
North Platte	2	.....
Omaha	2	†
St. Paul	4	.....
Valentine	2	.....
York	3	.....
New Hampshire.		
Bethehem	14	.....
Concord	3	6.0
Hanover	4	.....
Keene	4	.....
New Jersey.		
Atlantic City	5	.....
Belvidere	4	.....
Cape May	T.	1.5
Charlotteburg	7	.....
Hightstown	8	.....
Newark	5	.....
Tuckerton	8	.....
New York.		
Albany	T.	1.0
Binghamton	4	.....
Buffalo	4	†
Canton	5	.....
Cutchogue	10	.....
De Ruyter	8	.....
Franklinville	6	.....
Geneva	3	.....
Herkimer	2	.....
Ithaca	4	.....
Lake Placid	12	.....
Le Roy	6	.....
New York	6	.....
Ogdensburg	4	.....
Oswego	7	1.0
Rochester	6	3.5
Saranac Lake	12	.....
Setauket	6	.....
Syracuse	4	.....
Watertown	8	.....
Wedgwood	8	.....
North Dakota.		
Bismarck	1	16.0
Devils Lake	1	.....
Williston	5	6.0
Ohio.		
Bangorville	4	.....
Cadiz	5	.....
Cincinnati	T.	0.0

Stations.	Snow.	Ice in rivers, harbors, etc.
Ohio—Cont'd.	*Inches*	*Inches*
Cleveland	4	0.0
Columbus	1	.....
Hillsboro	1	.....
Kenton	3	.....
Philo	3	.....
Sandusky	3	5.5
Tiffin	4	.....
Toledo	2	4.0
Youngstown	5	.....
Pennsylvania.		
Emporium	4	.....
Ephrata	10	.....
Erie	7	4.0
Greensboro	4	.....
Greenville	5	.....
Harrisburg	6	†
Indiana	8	.....
Lawrenceville	6	.....
Lock Haven	6	.....
Muncy Valley	6	.....
Parkers Landing	7	.....
Philadelphia	5	2.5
Pittsburg	5	0.0
Ridgway	7	.....
Scranton	5	.....
Selinsgrove	14	.....
Somerset	12	.....
Stroudsburg	5	.....
Warren	7	.....
Rhode Island.		
Block Island	4	0.0
Kingston	3	.....
Narragansett	3	.....
Providence	3	†
South Dakota.		
Huron	T.	8.5
Yankton	1	1.0
Vermont.		
Brattleboro	2	6.0
Burlington	4	0.0
Northfield	7	.....
St. Johnsbury	5	.....
Virginia.		
Blacksburg	3	.....
Fredericksburg	4	.....
Lincoln	6	.....
Lynchburg	T.	0.0
Mount Weather	9	.....
Stephens City	8	.....
West Virginia.		
Bayard	12	.....
Elkins	4	6.0
Fairmont	4	.....
Glenville	4	.....
Parkersburg	4	*
Rowlesburg	6	.....
Wisconsin.		
Ashland	4	.....
Eau Claire	4	.....
Green Bay	4	4.0
Koepenick	4	.....
La Crosse	3	1.0
Lakemills	3	.....
Madison	2	.....
Medford	4	.....
Milwaukee	1	0.0
New London	5	.....
Racine	4	.....
Sheboygan	3	.....
Viroqua	2	.....
Wausau	4	.....
Wyoming.		
Cheyenne	T.	.....
Sheridan	2	.....
Yellowstone Park	4	.....

*Floating ice. †Shore ice. T. indicates trace.

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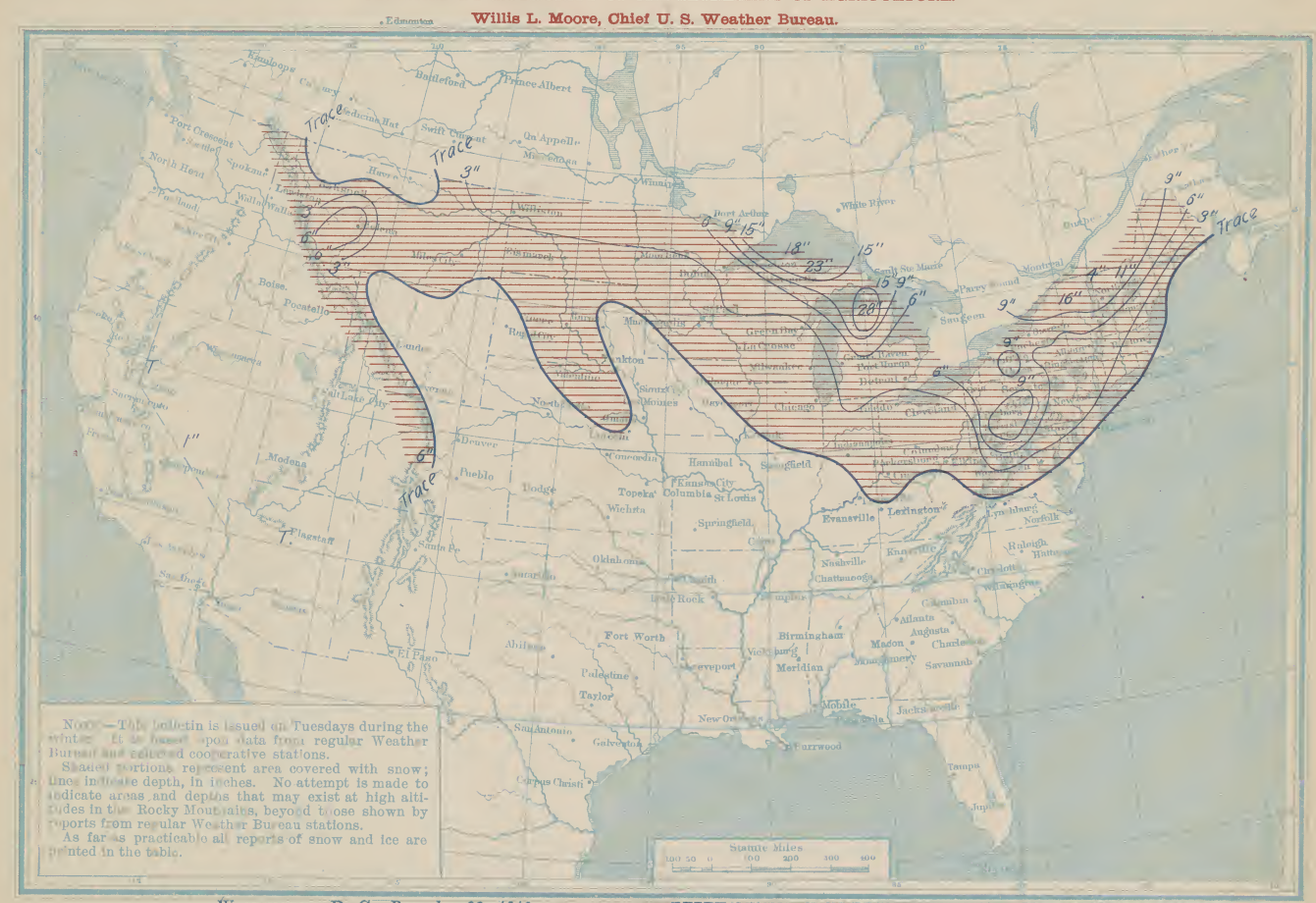

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Shaded portions represent area covered with snow; lines indicate depth, in inches. No attempt is made to indicate areas and depths that may exist at high altitudes in the Rocky Mountains, beyond those shown by reports from regular Weather Bureau stations.

As far as practicable all reports of snow and ice are printed in the table.

WASHINGTON, D. C., *December 20, 1910.*

DEPTH OF SNOW.

Since the date of the last issue of this bulletin no extensive storm area has passed over the country, and only small amounts of snow have occurred, except near the end of the week when a low pressure area over the Lake region, in conjunction with a similar condition along the middle Atlantic coast, gave general snow in the Lake region and interior New England, and rains along the Atlantic coast.

There has been a general reduction in the depth of snow covering during the last week in nearly all the districts that were snow covered last week, save in portions of northern New York and the greater part of New England and at a few points in the Lake region, although there has probably been but a small decrease in the water content, where the ground is still covered, over that at the end of last week, the weather being generally too cold to permit of any rapid melting.

From 5 inches to a foot or more of snow still covers a large area in the western portions of the Atlantic coast States from the northern portions of Virginia and West Virginia to the interior of New England, and extending westward to the shores of Lakes Erie and Ontario, and similar amounts cover the greater part of Michigan and the northern portions of Wisconsin, Minnesota, and North Dakota.

Over much of the interior of the country that was covered by small amounts last week the snow has disappeared, and there appears to have been no material snowfall in the mountain regions of the west during the week. The amount on the ground at Leadville, Colo., decreased 3 inches during the week, and farther north in the Yellowstone National Park 4 inches of snow disappeared, leaving the ground uncovered. But little snow appears to have fallen so far during the winter in the Plateau and Pacific coast States.

ICE IN RIVERS AND HARBORS.

Continued cold weather over the Middle Atlantic and New England States during the past week resulted in a considerable addition to the ice previously reported. In the Lake region and the main streams of the central valleys there has been but little change in the conditions reported last week. In the upper Missouri there has been an increase of several inches, but in the lower portions some ice disappeared during the week. The thickness now ranges from 5 inches at Sioux City to 20 inches at Bismarck. In the upper Mississippi the ice ranges in thickness from 4 inches at Davenport to 9.5 inches at St. Paul, with only shore ice below Hannibal. The headwaters of the Ohio above Pittsburg are icebound, but below that city the stream is open, only floating ice being reported.

Small but rather uniform increases have occurred in the thickness of ice in the Lake region, and where undisturbed by navigation it ranges, in Lake Superior from 3.5 inches at Sault Ste. Marie to 11 inches at Duluth, and in Lakes Erie and Ontario from 3 inches at Oswego to 7.5 inches at Sandusky.

In the Middle Atlantic States the smaller tributaries of the main streams are ice covered, the thickness ranging from 3 inches in central Virginia to 6 and 7 inches in the headwaters of the Hudson. The main streams are generally open, however.

In New England the thickness ranges from 10 inches in portions of the Connecticut River to 16.5 inches in the interior of Maine.

The following special reports have been received:

Gardiner, Me., December 19.—The extremely cold and dry weather is holding up all winter operations in the Kennebec Valley.

Hartford, Conn., December 20.—In the Housatonic and Connecticut valleys the depth of snow has not changed materially during the past week, the reports indicating, on the average, a slight increase. The thickness of ice has about doubled.

Albany, N. Y., December 20.—In the Hudson Valley the depth of snow ranges from a trace at Athens to 6 inches at Thurman; in the Mohawk Valley from 1 inch at Schenectady to 4 inches at Utica. The ice in the Hudson River averages 7 inches thick; in the Mohawk 6 inches.

Binghamton, N. Y., December 20.—The depth of snow in the upper Susquehanna Valley averages 5 inches, in the Unadilla 7, the Chenango 6, and the Tioughnioga 8.

Pittsburg, Pa., December 19.—The depth of snow on the ground over the contributary watersheds of the upper Ohio River has been considerably reduced since last week, although the water equivalent remaining on the ground is very little less. The rivers above Pittsburg remain frozen at practically all stations, and the water in the rivers is becoming very low.

Hannibal, Mo., December 19.—The ice in the Mississippi River is gorged at the bridge here; below there is only shore ice.

P. C. DAY, *Chief of Division.*

DEPTH OF SNOW AND THICKNESS OF ICE AT 8 P. M., DECEMBER 19, 1910.

Stations.	Snow.	Ice in rivers, harbors, etc.
Arizona.	*Inches*	*Inches*
Flagstaff	T.	.....
Colorado.		
Leadville	6	.....
Connecticut.		
Hartford	T.	*
New Haven	T.	.....
West Cornwall	5	.....
West Simsbury	T.	.....
Delaware.		
Delaware City	3	.....
District of Columbia.		
Washington	1	†
Illinois.		
Bloomington	T.	.....
Chicago	1	.....
Dwight	T.	.....
La Salle	T.	5.5
Martinton	1	.....
Monmouth	T.	.....
New Burnside	T.	.....
Peoria	0	4.0
Winnebago	1	.....
Indiana.		
Indianapolis	T.	.....
Knox	1	.....
Marion	T.	.....
Winona Lake	3	.....
Iowa.		
Cedar Rapids	T.	.....
Charles City	T.	.....
Davenport	T.	4.0
Des Moines	0	4.0
Dubuque	1	5.0
Forest City	T.	.....
Iowa City	T.	.....
Sioux City	0	5.0
Kansas.		
Iola	0	1.5
Kentucky.		
Lexington	T.	.....
Maine.		
Bangor	T.	10.0
Buckfield	5	.....
Cornish	7	.....
Eastport	0	10.0
Gardiner	6	8.0
Greenville	9	16.5
Lewiston	2	9.5
Millinocket	8	.....
Orono	4	.....
Portland	1	0.0
Presque Isle	6	.....
Maryland.		
Baltimore	1	†
Easton	1	.....
Frederick	6	.....
Oakland	4	.....
Massachusetts.		
Adams	3	.....
Boston	T.	.....
Concord	1	.....
Fitchburg	2	.....
Mansfield	2	.....
Michigan.		
Battle Creek	10	.....
Big Rapids	6	.....
Cadillac	18	.....
Calumet	18	.....
Chatham	16	.....
Detroit	4	5.0
Escanaba	4	7.0
Grand Haven	5	0.0
Grand Rapids	4	.....
Houghton	11	4.5
Ironwood	20	.....
Lansing	4	.....
Michigan—Cont'd.		
Lewiston	12	.....
Mancelona	28	.....
Manistee	4	.....
Marquette	23	0.0
Newberry	12	.....
Port Huron	4	4.0
Rock	16	.....
Saginaw	4	.....
Sault Ste. Marie	9	3.5
South Haven	2	.....
Minnesota.		
Angus	4	.....
Duluth	5	11.0
Fergus Falls	T.	.....
Hinckley	T.	.....
Mankato	T.	.....
Moorhead	1	14.0
New Richland	T.	.....
Redwood Falls	T.	.....
Reeds	T.	.....
St. Paul	0	9.5
Missouri.		
Hannibal	0	‡
Ironton	T.	.....
Montana.		
Helena	6	.....
Miles City	T.	.....
Nebraska.		
Lincoln	T.	.....
Omaha	0	†
St. Paul	1	.....
Valentine	T.	.....
York	1	.....
Nevada.		
Reno	T.	0.0
Tonopah	1	.....
New Hampshire.		
Bethehem	11	.....
Concord	2	8.0
Durham	2	.....
New Jersey.		
Belvidere	3	.....
Bridgeton	2	.....
Cape May	0	2.5
Charlotteburg	2	.....
Flemington	2	.....
Hightstown	3	.....
Newark	2	.....
Tuckerton	4	.....
New York.		
Albany	T.	7.0
Binghamton	4	.....
Buffalo	5	†
Canton	9	.....
Cutchogue	4	.....
De Ruyter	8	.....
Geneva	1	.....
Herkimer	3	.....
Ithaca	3	.....
Le Roy	6	.....
New York	1	.....
Ogdensburg	6	.....
Oswego	6	3.0
Rochester	7	3.0
Saranac Lake	16	.....
Setauket	3	.....
Syracuse	3	.....
Watertown	10	.....
Watkins	9	.....
North Dakota.		
Bismarck	T.	20.0
Devils Lake	5	.....
Williston	3	6.0
Ohio.		
Bangorville	2	.....
Cadiz	1	.....
Ohio—Cont'd.		
Canton	1	.....
Cincinnati	T.	*
Cleveland	1	†
Columbus	T.	.....
Garrettsville	3	.....
Greenville	T.	.....
Philo	T.	.....
Sandusky	1	7.5
Tiffin	T.	.....
Toledo	1	5.0
Wauseon	2	.....
Youngstown	T.	.....
Pennsylvania.		
Cresson	18	.....
Drifton	8	.....
Ephrata	5	.....
Erie	7	6.0
Greensboro	1	.....
Greenville	2	.....
Harrisburg	4	7.0
Indiana	3	.....
Lawrenceville	3	.....
Lock Haven	5	.....
Muncy Valley	5	.....
Parkers Landing	7	.....
Philadelphia	2	4.5
Pittsburg	1	*
Ridgway	3	.....
Scranton	T.	.....
Selinsgrove	12	.....
Somerset	15	.....
Warren	5	.....
Rhode Island.		
Block Island	T.	0.0
Narragansett	T.	.....
Providence	1	0.0
South Dakota.		
Huron	0	10.0
Pierre	T.	7.5
Yankton	T.	4.5
Vermont.		
Brattleboro	3	10.0
Burlington	4	0.0
Northfield	10	.....
St. Johnsbury	8	.....
Virginia.		
Fredericksburg	1	.....
Lincoln	3	.....
Lynchburg	T.	3.5
Richmond	0	3.0
Stephens City	5	.....
Woodstock	4	.....
West Virginia.		
Elkins	1	7.0
Fairmont	1	.....
Glenville	T.	.....
Parkersburg	1	*
Rowlesburg	5	.....
Wisconsin.		
Ashland	2	.....
Eau Claire	3	.....
Green Bay	2	5.0
Koepenick	4	.....
La Crosse	0	†
Lakemills	2	.....
Madison	1	.....
Medford	3	.....
Milwaukee	T.	0.0
Mount Horeb	1	.....
New London	2	.....
Racine	T.	.....
Sheboygan	2	.....
Spooner	2	.....
Viroqua	1	.....
Wyoming.		
Sheridan	T.	.....

*Floating ice. †Shore ice. ‡Ice gorged. T. indicates trace.

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Shaded portions represent area covered with snow; lines indicate depth, in inches. No attempt is made to indicate areas and depths that may exist at high altitudes in the Rocky Mountains, beyond those shown by reports from regular Weather Bureau stations.

As far as practicable all reports of snow and ice are printed in the table.

WASHINGTON, D. C., *December 27, 1910.*

DEPTH OF SNOW.

From the 22d to the 24th two general storm areas moved across the central and eastern portions of the country, the more northerly storm being accompanied by snow from the Missouri Valley eastward to the Lake region, and the more southerly by fairly heavy rains from the lower Mississippi Valley northeastward to the Middle Atlantic coast and New England.

As a result of the northern storm from 2 to 6 inches additional snow over that reported last week covers the country from the Missouri Valley eastward to the upper Lakes, while the warm rains from the southern storm lessened the depth of snow over the upper Ohio Valley and Middle Atlantic States from 1 to 5 inches. Considerable snow occurred near the first of the week over the higher elevations of the southern portions of the Plateau and Rocky Mountain regions, but aside from the above no appreciable amount of snow appears to have fallen in the Mountain regions of the West during the week.

A considerable body of snow still covers the Appalachian Mountain region from northern Virginia and western Maryland to central and northern New York, extending westward to the lower Lakes; and over the interior of New England the depths range from 3 to 10 inches.

From the upper Missouri Valley eastward to the Lake region the ground is generally snow covered, the depths ranging from 1 to 4 inches in portions of Montana and the Dakotas to more than 2 feet in portions of northern Michigan.

Several inches of snow cover the ground in portions of eastern Nebraska, but over most of the Great Plains, the lower Missouri, middle Mississippi and lower Ohio valleys there is now but little snow.

In portions of the Mountain regions of Colorado, Utah, Nevada, and northern Arizona from 1 to 6 inches of snow fell during the week, but over the lower elevations of the remaining portions of the western mountain districts there is at present no covering of snow, and as stated in previous issues but little has occurred so far during the winter.

ICE IN RIVERS AND HARBORS.

Continued moderately cold weather has added considerably to the amount of ice previously reported in the more northern districts, but over the Atlantic coast States and in the Appalachian Mountain regions the generally warm and heavy rains of the 23d and 24th broke up much of the ice, and there is now considerably less than was reported last week.

In the upper Missouri River the conditions range from shore ice at Omaha to a thickness of over 2 feet at Bismarck. In the upper Mississippi no ice is reported south of Hannibal, but from Keokuk northward the thickness ranges generally from 9 to 10 inches.

The Ohio River is open throughout its course, only floating ice being reported from any point.

In the Lake region the amount of ice has increased considerably, especially over Lakes Erie and Ontario. The thickness in Lake Superior ranges from 5 inches at the eastern extremity to 14.5 at Duluth, and in the lower Lakes from 3 inches at Oswego to 10 inches at Sandusky. No great amount of ice has yet formed over the southern portions of Lake Michigan, and similar conditions appear to prevail in portions of Lake Huron.

Along the Middle Atlantic coast considerable ice has disappeared from the lower portions of the rivers, and it has probably broken up in most of the smaller tributaries, but not before a large amount was harvested.

In the Hudson and other rivers farther north there has been a general but small increase in the amount of ice reported, and the thickness now ranges from 7.5 inches at Albany to nearly 2 feet in the interior of New England, where harvesting has now commenced.

The following special reports have been received:

Brattleboro, Vt., December 26.—The harvesting of ice on the Connecticut River here has commenced.

Hartford, Conn., December 27.—The ice in the Connecticut River averages 10 inches thick, and the snow in the valley ranges from a trace in Connecticut to 9 inches in the upper portion.

Albany, N. Y., December 27.—In the Hudson Valley the depth of snow ranges from a trace at Athens to 5 inches at Corinth; in the Mohawk Valley it ranges from 1 inch at Schenectady to 4 inches at Utica. The ice in the Hudson River averages 9 inches thick; in the Mohawk it averages 8 inches.

P. C. DAY, *Chief of Division.*

DEPTH OF SNOW AND THICKNESS OF ICE AT 8 P. M., DECEMBER 26, 1910.

Stations.	Snow.	Ice in rivers, harbors, etc.
Arizona.	*Inches*	*Inches*
Flagstaff	6	.....
Colorado.		
Denver	T.	.....
Durango	3	.....
Grand Junction	3	.....
Leadville	10	.....
Connecticut.		
Hartford	T.	0.0
New Haven	T.	.....
West Cornwall	T.	.....
District of Columbia.		
Washington	0	†
Illinois.		
Chicago	T.	.....
Dwight	T.	.....
La Salle	T.	8.0
Monmouth	T.	.....
New Burnside	T.	.....
Peoria	0	6.5
Winnebago	3	.....
Indiana.		
Evansville	0	*†
Indianapolis	1	.....
Knox	1	.....
Laporte	5	.....
Marion	2	.....
Paoli	1	.....
Rockville	T.	.....
Seymour	T.	.....
Winona Lake	1	.....
Iowa.		
Carroll	T.	.....
Charles City	3	.....
Davenport	T.	10.5
Des Moines	T.	5.0
Dubuque	2	9.0
Estherville	T.	.....
Humboldt	1	.....
Keokuk	0	9.0
Sioux City	T.	8.0
Kansas.		
Iola	0	1.0
Kentucky.		
Beattyville	1	.....
Lexington	T.	.....
Louisville	T.	0.0
St. John	1	.....
Maine.		
Bangor	T.	11.0
Buckfield	4	.....
Eastport	0	9.0
Greenville	8	20.0
Lewiston	T.	9.5
Orono	1	.....
Portland	1	0.0
Presque Isle	4	.....
Maryland.		
Baltimore	T.	†
Darlington	3	.....
Massachusetts.		
Amherst	T.	.....
Boston	T.	.....
Fitchburg	T.	.....
Mansfield	T.	.....
Michigan.		
Alpena	10	*
Big Rapids	8	.....
Cadillac	20	.....
Detroit	6	7.0
Escanaba	8	2.0
Grand Haven	5	†
Grand Rapids	5	.....
Houghton	18	7.0

Stations.	Snow.	Ice in rivers, harbors, etc.
Michigan—Cont'd.	*Inches*	*Inches*
Lansing	6	.....
Mancelona	31	.....
Marquette	27	†
Port Huron	5	7.0
Sault Ste. Marie	15	5.0
Minnesota.		
Collegeville	3	.....
Duluth	7	14.0
Fergus Falls	5	.....
Fort Ripley	4	.....
Grand Meadow	4	.....
Mankato	2	.....
Minneapolis	4	.....
Moorhead	5	16.0
New Richland	4	.....
Reeds	5	.....
St. Paul	3	10.5
State Sanatorium	8	.....
Missouri.		
St. Joseph	0	*
Montana.		
Havre	1	.....
Helena	4	.....
Kalispell	1	.....
Miles City	T.	.....
Nebraska.		
Genoa	5	.....
Lincoln	T.	.....
Minden	T.	.....
Omaha	T.	†
St. Paul	4	.....
Stanton	2	.....
York	2	.....
Nevada.		
Tonopah	7	.....
Winnemucca	T.	.....
New Hampshire.		
Bethlehem	9	.....
Concord	2	9.0
Durham	2	.....
Hanover	8	.....
New Jersey.		
Cape May	0	2.5
Flemington	T.	.....
New Mexico.		
Santa Fe	T.	.....
New York.		
Albany	T.	7.5
Binghamton	3	.....
Buffalo	4	4.0
Canton	6	.....
Cutchogue	1	.....
Franklinville	11	.....
Herkimer	3	.....
Ithaca	3	.....
New York	T.	.....
Ogdensburg	8	.....
Oswego	7	3.0
Rochester	6	6.5
Syracuse	4	.....
Watkins	10	.....
North Dakota.		
Bismarck	1	24.5
Devils Lake	4	.....
Williston	2	8.0
Ohio.		
Cadiz	T.	.....
Cincinnati	T.	*
Cleveland	T.	8.0
Columbus	T.	.....
Garrettsville	4	.....
Greenville	2	.....
Kenton	2	.....

Stations.	Snow.	Ice in rivers, harbors, etc.
Ohio—Cont'd.	*Inches*	*Inches*
Philo	1	.....
Sandusky	1	10.0
Tiffin	T.	.....
Toledo	2	6.0
Wauseon	4	.....
Pennsylvania.		
Clarion	7	.....
Confluence	1	.....
Drifton	6	.....
Erie	3	8.0
Franklin	5	.....
Greensboro	T.	.....
Harrisburg	2	8.0
Lock Haven	6	.....
Marion	4	.....
Muncy Valley	4	.....
Parkers Landing	5	.....
Philadelphia	0	2.0
Saltsburg	2	.....
Scranton	1	.....
Stroudsburg	1	.....
Warren	8	.....
West Newton	2	.....
Rhode Island.		
Narragansett	T.	.....
Providence	T.	0.0
South Dakota.		
Huron	2	12.0
Pierre	T.	8.0
Yankton	T.	8.0
Tennessee.		
Nashville	T.	.....
Utah.		
Modena	1	.....
Salt Lake City	T.	.....
Vermont.		
Brattleboro	4	12.0
Burlington	6	0.0
Northfield	10	.....
St. Johnsbury	8	.....
Virginia.		
Blacksburg	T.	.....
Fredericksburg	T.	.....
Lincoln	2	.....
Lynchburg	T.	4.0
Mount Weather	5	.....
Stephens City	2	.....
Woodstock	1	.....
West Virginia.		
Elkins	T.	0.0
Fairmont	1	.....
Glenville	T.	.....
Parkersburg	T.	*
Romney	3	.....
Rowlesburg	4	.....
Wisconsin.		
Ashland	6	.....
Eau Claire	7	.....
Green Bay	6	6.0
Hancock	4	.....
Koepenick	4	.....
La Crosse	4	†
Lakemills	4	.....
Madison	2	.....
Medford	5	.....
Milwaukee	1	0.0
New London	5	.....
Racine	T.	.....
Sheboygan	3	.....
Viroqua	4	.....
Wyoming.		
Cheyenne	T.	.....
Sheridan	T.	.....

*Floating ice. †Shore ice. T. indicates trace.

U. S. DEPARTMENT OF AGRICULTURE,
WEATHER BUREAU.

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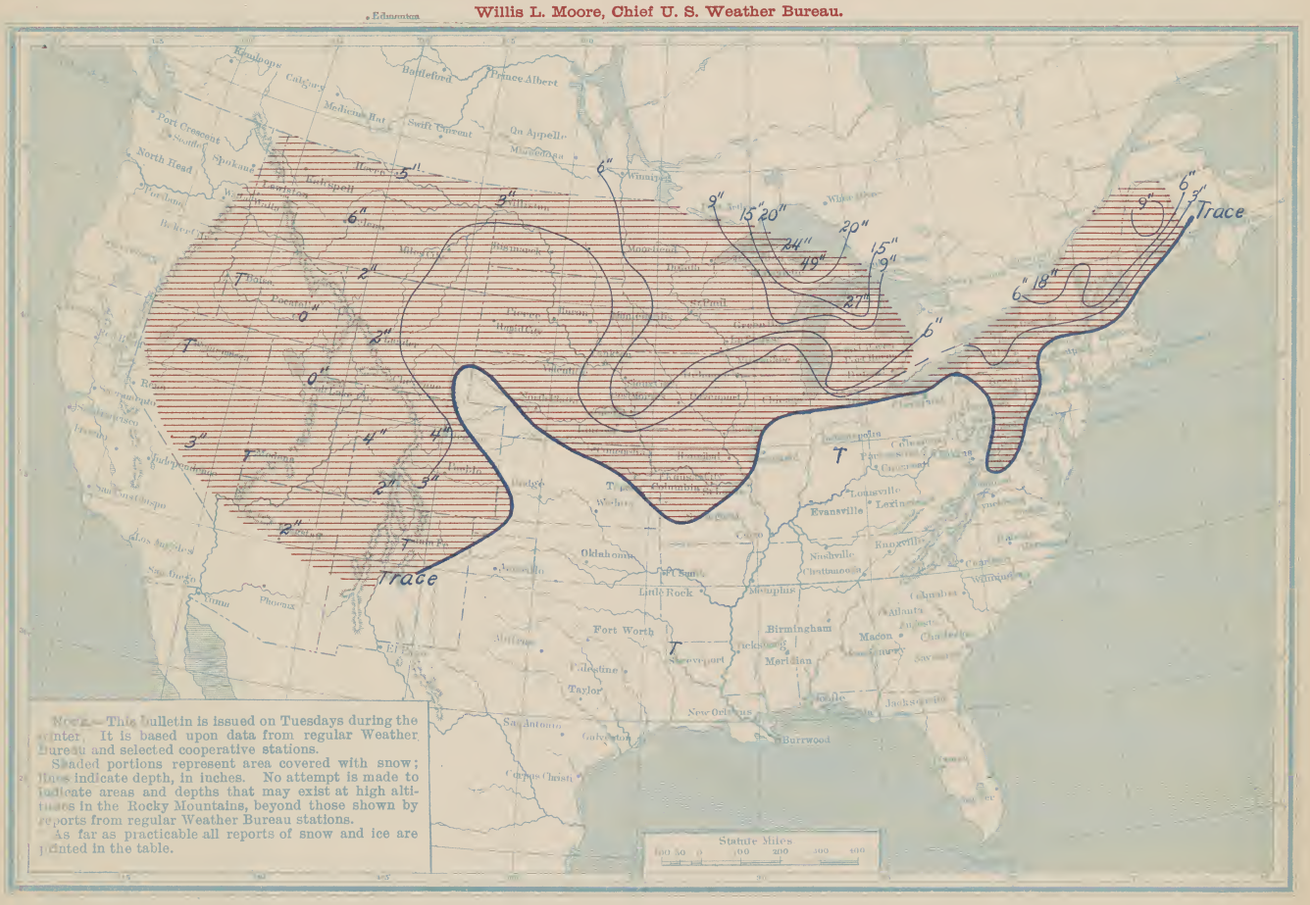

NOTE.—This bulletin is issued on Tuesdays during the winter. It is based upon data from regular Weather Bureau and selected cooperative stations.

Shaded portions represent area covered with snow; lines indicate depth, in inches. No attempt is made to indicate areas and depths that may exist at high altitudes in the Rocky Mountains, beyond those shown by reports from regular Weather Bureau stations.

As far as practicable all reports of snow and ice are printed in the table.

WASHINGTON, D. C., *January 3, 1911.*

DEPTH OF SNOW.

An extensive storm area moved from the southern Rocky Mountain region northeastward to New England during the middle of the week, accompanied by general rains throughout most of the districts east of the Mississippi, with some snow over the Lake region and portions of New England. The warm rains carried off much of the snow still remaining on the ground in the Appalachian Mountain region, New York, New England, the Ohio Valley, and lower Lake region.

During the last day of the old year and the first two days of the new year a widespread storm area moved from the northern Rocky Mountain region to the Atlantic States, accompanied by rains in southern and by rain changing to snow in more northern districts. As a result a considerable increase has occurred in the depth of the snow covering in portions of the Rocky Mountain regions, Missouri and upper Mississippi valleys, and upper Lake region, with prospects of a further additional fall in portions of the Ohio Valley and Appalachian Mountain districts, where snow was falling at 8 p. m. of the 2d and continues at this writing.

Unusually deep snow covers portions of the upper Michigan peninsula, the depth at Marquette exceeding 4 feet, and there is a considerable covering over the middle Missouri and upper Mississippi valleys, and in portions of the northern Rocky Mountain region. A large amount of snow disappeared from the interior portions of the Middle Atlantic and New England States, and only small amounts now cover the ground in most of those States.

No large amount of snow has yet accumulated in the mountain regions of the West.

ICE IN RIVERS AND HARBORS.

Continued moderate weather during most of the past week over the Ohio Valley and Middle Atlantic States resulted in the general breaking up of the ice remaining in the smaller streams, and all rivers of those districts are now practically free from ice, except in the upper portion of the Hudson watershed. There has also been a considerable decrease in the amount of ice in portions of New England.

Throughout the upper Missouri and upper Mississippi valleys and in the upper Lake region there has been a moderate increase in the thickness of ice reported over that of last week. In the Missouri River the ice ranges from 10 inches at Sioux City to 26 inches at Bismarck, with shore and floating ice in the lower portions. The Mississippi is icebound from Hannibal northward, the thickness ranging from 8.5 to 13.5 inches.

Throughout the upper Lake region there was a small increase in the amount of ice over that of last week in most of the harbors, the thickness in Lake Superior now ranging from 7 inches at the Soo to 15 inches at Duluth, and there is considerable ice in Lake Huron and over the northern portion of Lake Michigan. Some decrease is reported from Lakes Erie and Ontario, but the harbors of those lakes are still generally ice-covered.

The following special reports have been received:

Gardiner, Me., January 2.—Unseasonably mild weather is rapidly wasting all traces of winter in the Kennebec Valley.

Hartford, Conn., January 3.—In Connecticut and Massachusetts the ground in the Connecticut Valley is bare, while the depth of snow in New Hampshire and Vermont ranges from 1 inch in the lower to 6 inches in the upper portions. The ice is 14 inches thick at Wells River, Vt.

Albany, N. Y., January 3.—In the Hudson Valley the depth of snow ranges from a trace at Mechanicsville to 3 inches at Corinth, while in the Mohawk the ground is bare in the lower portion, but the snow is 3 inches deep in the upper portion. In the Hudson River the ice averages 8 inches thick; in the Mohawk River it averages 9 inches.

Binghamton, N. Y., January 3.—Thin ice formed during the night on the Susquehanna River here.

Harrisburg, Pa., January 2.—The ice broke in the west branch of the Susquehanna River at Clearfield, Pa., December 29, and gorged between Renovo and Williamsport; in the north branch it broke at Towanda on the 30th and at Wilkesbarre on the 31st. It broke at Harrisburg at 6 p. m. to-day and heavy cakes of ice are now passing on about 7 feet of water.

Hannibal, Mo., January 2.—The Mississippi River continues frozen above the bridge, where ice is being harvested.

P. C. DAY, *Chief of Division.*

DEPTH OF SNOW AND THICKNESS OF ICE AT 8 P. M., JANUARY 2, 1911.

Stations.	Snow.	Ice in rivers, harbors, etc.
Arizona.	*Inches*	*Inches*
Flagstaff	2	.....
Colorado.		
Denver	4	.....
Durango	2	.....
Grand Junction	4	.....
Pueblo	T.	.....
Connecticut.		
Hartford	0	8.0
Idaho.		
Boise	T.	.....
Illinois.		
Chicago	T.	.....
Dwight	T.	.....
La Salle	T.	8.5
Martinton	T.	.....
Peoria	T.	8.0
Indiana.		
Laporte	2	.....
Winona Lake	T.	.....
Iowa.		
Albia	T.	.....
Cedar Rapids	T.	.....
Charles City	3	.....
Davenport	T.	11.5
Des Moines	3	7.5
Dubuque	2	10.0
Iowa City	T.	.....
Keokuk	0	8.5
Sioux City	6	10.0
Kansas.		
Concordia	T.	.....
Iola	0	3.0
Liberal	T.	.....
Topeka	T.	.....
Louisiana.		
Shreveport	T.	.....
Maine.		
Bangor	T.	12.0
Cornish	6	.....
Eastport	0	8.0
Gardiner	T.	6.0
Greenville	7	22.0
Lewiston	T.	11.0
Millinocket	10	.....
Orono	T.	.....
Presque Isle	4	.....
Michigan.		
Alpena	8	4.0
Ann Arbor	6	.....
Big Rapids	4	.....
Calumet	24	.....
Chatham	24	.....
Detroit	4	7.0
Escanaba	10	6.0
Grand Haven	4	†

Stations.	Snow.	Ice in rivers, harbors, etc.
Michigan—Cont'd.	*Inches*	*Inches*
Grand Rapids	7	.....
Houghton	19	10.0
Lansing	7	.....
Marcelona	27	.....
Marquette	49	0.0
Port Huron	6	9.0
Rock	24	.....
St. Ignace	14	.....
Sault Ste. Marie	17	7.0
South Haven	8	.....
Minnesota.		
Angus	6	.....
Collegeville	2	.....
Duluth	6	15.0
Fort Ripley	6	.....
Grand Meadow	8	.....
Milan	1	.....
Minneapolis	7	.....
Moorhead	6	20.0
Reeds	7	.....
St. Paul	5	13.5
State Sanatorium	8	.....
Missouri.		
Columbia	T.	.....
Hannibal	T.	†
Kansas City	T.	†
St. Joseph	T.	*
St. Louis	T.	*
Springfield	T.	.....
Montana.		
Havre	5	.....
Helena	6	.....
Miles City	1	.....
Nebraska.		
Auburn	4	.....
Broken Bow	2	.....
Lincoln	3	.....
North Platte	T.	.....
Omaha	6	†
St. Paul	2	.....
York	4	.....
Nevada.		
Tonopah	3	.....
Winnemucca	T.	.....
New Hampshire.		
Bethlehem	5	.....
Concord	T.	10.0
Keene	3	.....
New Jersey.		
Flemington	T.	.....
New Mexico.		
Santa Fe	T.	.....
New York.		
Albany	0	5.0
Buffalo	T.	*†

Stations.	Snow.	Ice in rivers, harbors, etc.
New York—Cont'd	*Inches*	*Inches*
Canton	4	.....
Herkimer	2	.....
Ithaca	T.	.....
Le Roy	6	.....
Ogdensburg	18	.....
Oswego	3	5.0
Rochester	2	7.5
North Dakota.		
Bismarck	1	26.0
Williston	3	15.0
Ohio.		
Cleveland	0	7.0
Garrettsville	T.	.....
Sandusky	0	10.0
Toledo	T.	5.0
Pennsylvania.		
Drifton	2	.....
Emporium	1	.....
Harrisburg	T.	*
Lock Haven	2	.....
Marion	1	.....
Muncy Valley	2	.....
South Dakota.		
Huron	1	15.0
Pierre	T.	16.0
Rapid City	1	.....
Yankton	4	9.0
Utah.		
Modena	T.	.....
Vermont.		
Brattleboro	2	11.5
Burlington	T.	0.0
Northfield	8	.....
St. Johnsbury	7	.....
Virginia.		
Dale Enterprise	T.	.....
Lincoln	T.	.....
Stephens City	T.	.....
Wisconsin.		
Ashland	8	.....
Green Bay	11	6.0
Koepenick	8	.....
La Crosse	6	†
Lakemills	2	.....
Madison	2	.....
Medford	4	.....
Milwaukee	1	0.0
Mount Horeb	3	.....
Sheboygan	2	.....
Viroqua	3	.....
Wausau	7	.....
Wyoming.		
Lander	2	.....
Sheridan	3	.....
Yellowstone Park	2	.....

*Floating ice. †Shore ice. T. indicates trace.

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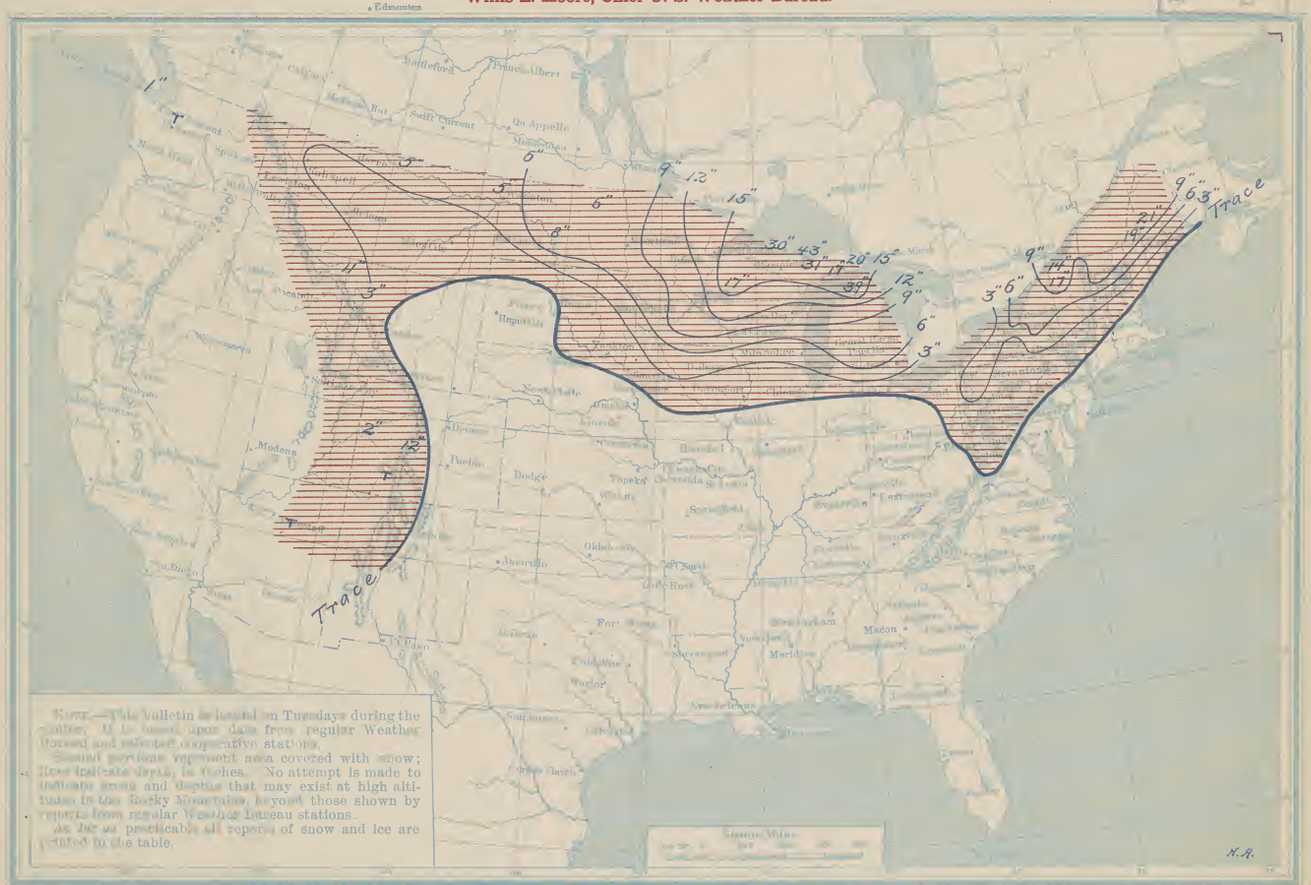

WASHINGTON, D. C., *January 10, 1911.*

DEPTH OF SNOW.

The storm over the Atlantic coast districts referred to last week moved rapidly northeastward during Tuesday, accompanied by considerable snow in portions of the Ohio Valley, Lake, and Appalachian Mountain regions, and New England. Two additional storm areas moved along the northern border from the Rocky Mountains eastward during the week, accompanied by small amounts of snow, and near the close of the week considerable snow appears to have fallen in portions of the mountain districts of Montana and Wyoming, where snow is still falling at this writing. Aside from the above but little snow occurred in any part of the country, and the area now covered by any appreciable amount of snow is considerably less than at the same time last week.

In the lower Missouri Valley from 3 to 6 inches of snow disappeared during the week, and throughout the entire wheat-growing States the ground is now generally bare. Several inches of snow disappeared from the lower elevations of the middle and southern mountain regions of the West, and only small amounts now remain at these elevations, and even in the higher regions there still appears to be but a small accumulation of snow.

Increases of from 2 to 9 inches occurred generally from North Dakota eastward to the upper Lake region, and small increases occurred from western Pennsylvania northeastward through western and central New York and portions of New England, while in Maine the depths have been increased from 3 to 12 inches.

ICE IN RIVERS AND HARBORS.

No marked change occurred during the week in the ice conditions, except for a general increased thickness in the more northern districts and the presence of considerable floating ice in the larger streams farther south, due to the breaking up during last week of much of the ice in the smaller tributaries.

In the Missouri River the ice ranges from 2.5 inches at Kansas City to 27.5 inches at Bismarck, with apparently open water at St. Joseph, Mo., and Omaha, Nebr. The Mississippi is generally closed from near Hannibal northward, the maximum thickness being 17 inches at Davenport, and floating ice is reported as far south as Cairo.

In the Lake region the amount of ice has increased at most points, the thickness in Lake Superior now ranging from 9 to 21 inches, although only floating ice is reported from Marquette on the south shore. No increase appears to have occurred in Lake Michigan, but in Lakes Huron, Erie, and Ontario there have been small increases at most of the reporting stations.

No ice is reported in the Ohio south of Pittsburg, and the main tributaries of that stream appear to be open and at good boating stages. The main streams of the Middle Atlantic States are mostly open save for occasional gorges caused by floating ice.

In the Hudson the ice averages about 8 inches at Albany, and ice up to more than 2 feet in thickness is reported from the rivers of Maine. On account of the changeable character of the weather the harvesting of ice in New England is being delayed.

The following special reports have been received:

Gardiner, Me., January 9.—The changeable weather is holding up all winter operations in the Kennebec Valley.

Brattleboro, Vt., January 9.—Some snow remains on the hills here.

Hartford, Conn., January 10.—In the Connecticut Valley the snow condition is unchanged. The ice in the upper portion of the Connecticut River averages 12 inches thick, while in the lower portion the river is open in many sections.

Albany, N. Y., January 10.—In the Hudson Valley the depth of snow ranges from a trace at Athens to 3 inches at Corinth; in the Mohawk Valley it averages 4 inches from Tribes Hill westward, but there is only a trace in the lower portion. The ice in the Hudson and Mohawk rivers averages 8 inches thick.

Binghamton, N. Y., January 10.—The depth of snow in the upper Susquehanna Valley averages 3 inches, in the Unadilla and Chenango valleys 5 inches, and in the Tioughnioga Valley 6 inches.

Rochester, N. Y., January 10.—The ice went out of the Genesee River here with the freshet on the afternoon of January 4.

Harrisburg, Pa., January 9.—The north branch of the Susquehanna River is open below Towanda, and the main stream is open from Sunbury to the vicinity of Columbia, Pa., with much heavy ice lodged along the shores. The ice is still intact on the McCall Ferry dam and broken ice is lodged against it, packing the channel up to Columbia. In the west branch the ice is still gorged below Renovo, Pa.

Pittsburg, Pa., January 9.—There has been a general increase in the amount of snow, the depths averaging over 5 inches between the Clarion and Red Bank, from 2 to 4 inches in the upper Allegheny, and less than 1 inch in the Kiskiminetas and Monongahela valleys. The rivers during the past week have remained open and at a good stage.

Hannibal, Mo., January 9.—The Mississippi River is frozen over above and below the city.

Cairo, Ill., January 9.—The ice is blocked in the Mississippi River opposite here, but the river is open below and for several miles above as well as in places here.

P. C. DAY, *Chief of Division.*

DEPTH OF SNOW AND THICKNESS OF ICE AT 8 P. M., JANUARY 9, 1911.

Stations.	Snow.	Ice in rivers, harbors, etc.
Arizona.	*Inches*	*Inches*
Flagstaff	T.	.....
Colorado.		
Durango	T.	.....
Grand Junction	2	.....
Leadville	12	.....
Connecticut.		
West Cornwall	T.	.....
District of Columbia.		
Washington	0	*
Illinois.		
Cairo	0	*
Chicago	T.	.....
La Salle	T.	9.5
Peoria	0	7.0
Iowa.		
Atlantic	T.	.....
Carroll	T.	.....
Charles City	6	.....
Creston	T.	.....
Davenport	T.	17.0
Des Moines	T.	10.0
Dubuque	2	15.0
Forest City	5	.....
Humboldt	5	.....
Iowa City	T.	.....
Keokuk	0	11.5
Sioux City	1	13.0
Kansas.		
Iola	0	4.0
Maine.		
Bangor	4	12.0
Buckfield	7	.....
Cornish	9	.....
Eastport	T.	7.5
Ellsworth	T.	.....
Gardiner	4	7.0
Greenville	19	24.5
Lewiston	3	12.0
Millinocket	21	.....
Orono	6	.....
Portland	2	0.0
Maryland.		
Oakland	T.	.....
Massachusetts.		
Adams	1	.....
Michigan.		
Alpena	13	11.0
Ann Arbor	8	.....
Battle Creek	9	.....
Big Rapids	7	.....
Calumet	33	.....
Chatham	29	.....
Detroit	4	8.0
Escanaba	17	10.0
Grand Haven	6	†
Grand Rapids	6	.....
Hillsdale	6	.....
Houghton	30	12.0
Iron Mountain	14	.....
Lansing	6	.....
Mancelona	39	.....
Manistee	10	.....
Marquette	43	*
Michigan—Cont'd.	*Inches*	*Inches*
Newberry	17	.....
Port Huron	6	11.0
Rock	31	.....
St. Ignace	25	.....
Sault Ste. Marie	20	9.0
South Haven	2	.....
Minnesota.		
Angus	7	.....
Collegeville	5	.....
Duluth	14	21.0
Fergus Falls	9	.....
Fort Ripley	8	.....
Glencoe	5	.....
Grand Meadow	11	.....
Mankato	11	.....
Milan	3	.....
Minneapolis	7	.....
Moorhead	8	23.0
New Richland	8	.....
Redwood Falls	8	.....
Reeds	8	.....
St. Paul	7	16.5
State Sanatorium	9	.....
Virginia	12	.....
Windom	6	.....
Missouri.		
Hannibal	0	†
Kansas City	0	2.5
St. Louis	0	*
Montana.		
Havre	5	.....
Helena	1	.....
Kalispell	1	.....
Miles City	T.	.....
Nebraska.		
Omaha	0	†
Valentine	T.	.....
New Hampshire.		
Concord	1	12.0
Keene	1	.....
New Jersey.		
Charlotteburg	T.	.....
New Mexico.		
Santa Fe	T.	.....
New York.		
Albany	T.	9.0
Binghamton	2	.....
Buffalo	2	7.0
Canton	5	.....
De Ruyter	6	.....
Herkimer	2	.....
Ithaca	1	.....
Lake Placid	17	.....
Le Roy	3	.....
Oswego	6	7.0
Rochester	1	0.0
Saranac Lake	14	.....
Saratoga Springs	2	.....
Syracuse	1	.....
Watertown	8	.....
North Dakota.		
Bismarck	8	27.5
Devils Lake	6	.....
Williston	5	18.0
Ohio.	*Inches*	*Inches*
Cadiz	T.	.....
Canton	T.	.....
Cleveland	T.	7.0
Garrettsville	2	.....
Sandusky	0	10.0
Toledo	T.	8.0
Youngstown	T.	.....
Pennsylvania.		
Drifton	T.	.....
Emporium	1	.....
Erie	T.	7.0
Greensboro	T.	.....
Greenville	1	.....
Harrisburg	T.	*
Indiana	3	.....
Lock Haven	2	.....
Marion	T.	.....
Muncy Valley	1	.....
Parkers Landing	5	.....
Pittsburg	T.	*
Ridgway	2	.....
Selinsgrove	1	.....
Somerset	T.	.....
Warren	2	.....
South Dakota.		
Huron	2	18.0
Pierre	0	17.5
Yankton	T.	12.0
Vermont.		
Brattleboro	0	13.0
Burlington	1	0.0
Northfield	9	.....
St. Johnsbury	8	.....
Virginia.		
Dale Enterprise	T.	.....
Washington.		
Seattle	T.	.....
Tatoosh Island	1	.....
West Virginia.		
Bayard	1	.....
Fairmont	T.	.....
Glenville	2	.....
Rowlesburg	T.	.....
Wisconsin.		
Eau Claire	17	.....
Green Bay	11	6.0
Hancock	12	.....
Koepenick	14	.....
La Crosse	12	†
Lakemills	6	.....
Madison	4	.....
Medford	14	.....
Milwaukee	5	0.0
Mount Horeb	4	.....
Oshkosh	11	.....
Racine	T.	.....
Sheboygan	4	.....
Viroqua	11	.....
Wausau	10	.....
Wyoming.		
Sheridan	T.	.....
Yellowstone Park	11	.....

*Floating ice. †Shore ice. T. indicates trace.

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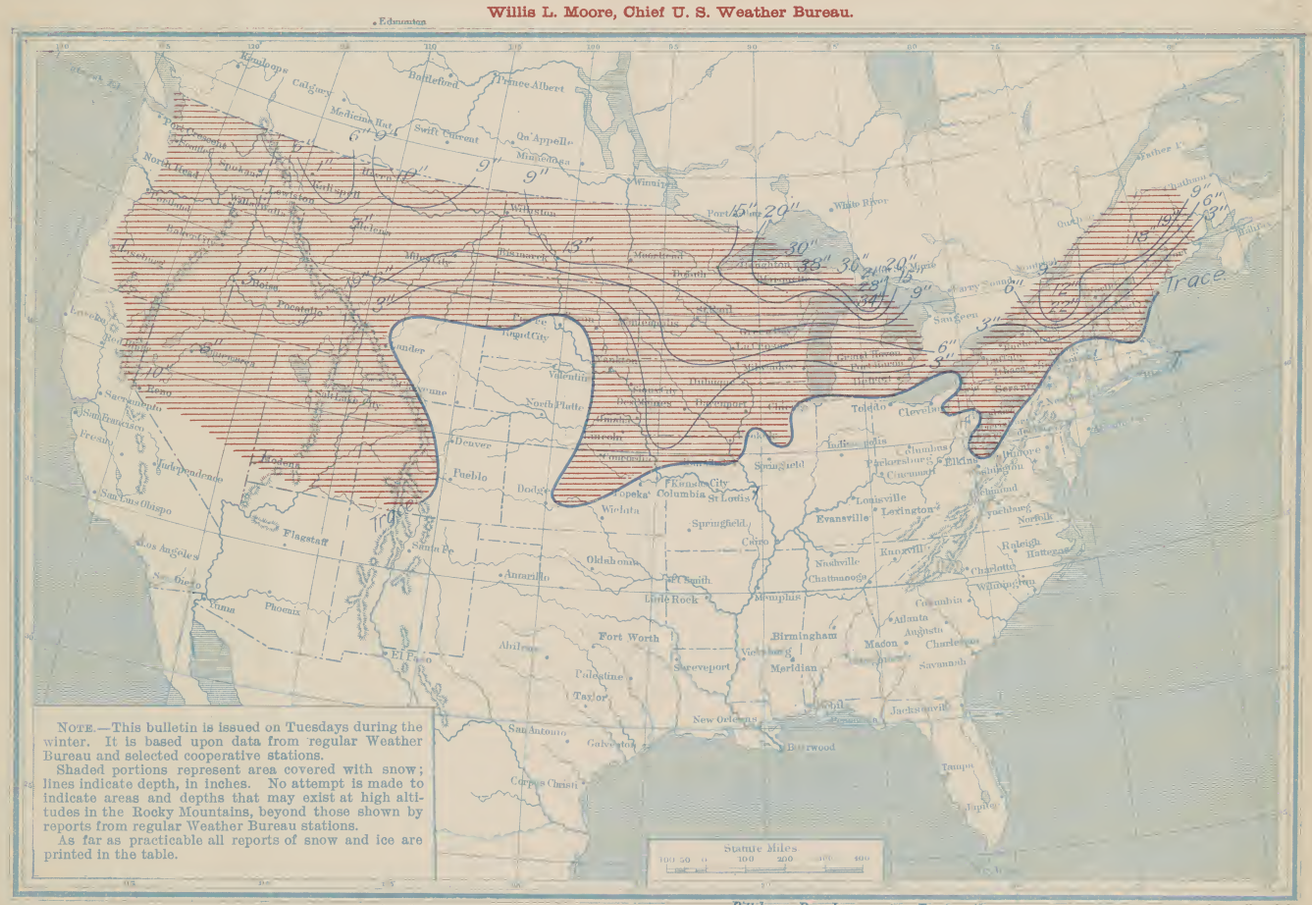

NOTE.—This bulletin is issued on Tuesdays during the winter. It is based upon data from regular Weather Bureau and selected cooperative stations.

Shaded portions represent area covered with snow; lines indicate depth, in inches. No attempt is made to indicate areas and depths that may exist at high altitudes in the Rocky Mountains, beyond those shown by reports from regular Weather Bureau stations.

As far as practicable all reports of snow and ice are printed in the table.

WASHINGTON, D. C., *January 17, 1911.*

DEPTH OF SNOW.

The week opened with stormy weather prevailing over the northern Rocky Mountain region, with heavy snow in portions of Wyoming and Montana, and general rain or snow over much of the Plateau and Pacific coast States. Snow contined at intervals for several days in the mountain regions of the West, and in the more northern portions, especially in the higher mountains, the depths appear to have been sufficient to seriously interfere with railroad traffic.

Practically no snow occurred over the eastern districts until about Sunday when there were light falls in portions of the Lake region and Ohio Valley, continuing locally during Monday, while at this writing snow is falling in portions of the lower Missouri, upper Mississippi, and lower Ohio valleys, with prospects of its advance into the Lake region and portions of the Middle Atlantic States.

The high temperatures with rain about the middle of the week over the Ohio Valley, lower Lake region, and Middle Atlantic States carried off practically all the snow remaining from the preceding week over these districts.

At the close of the week only a very light covering of snow remained in any portion of the Atlantic coast States, save in the Adirondack regions of New York and the interior of New England. In the Ohio Valley the snow had entirely disappeared, save for a light covering in portions of West Virginia and Pennsylvania, and only small amounts were reported from the middle Mississippi and lower Missouri valleys.

From the upper Lakes westward to the Rocky Mountains and over portions of the middle Plateau region there was a considerable increase in the depth of the snow covering, the depth now ranging from about 15 inches at the western extremity of Lake Superior to 10 or more inches in North Dakota and eastern and central Montana.

In the Rocky Mountains there was an increase of from 6 to 10 inches at moderate elevations with doubtless much greater falls in the higher ranges. Considerable snow appears to have occurred also in the mountains of California and Nevada.

ICE IN RIVERS AND HARBORS.

Cold weather was the rule during the past week over the more northern districts from the Rocky Mountains eastward, and there was a general increase in the thickness of ice in all streams, lakes, etc., in those districts, except on the southern shores of Lakes Erie and Ontario and locally in New England.

In the lower portions of the Missouri River the ice broke up at Kansas City and only shore or floating ice is reported from St. Joseph southward. From Omaha northward the river is closed, the thickness ranging from 9 to 29 inches.

In the Mississippi floating ice is reported as far south as St. Louis, and it is closed from Keokuk northward, the thickness ranging from 12 to 20 inches.

Small increases occurred in Lake Superior and over the northern portions of Lakes Michigan and Huron, while in Lakes Erie and Ontario higher temperatures and warm rains broke up the ice considerably in the harbors.

The Ohio River and its tributaries are generally free of ice and flood stages occurred in the upper portions of the main stream.

The rivers of the Atlantic coast south of the Hudson are in the main free of ice, except where gorged. No material change has occurred in the ice conditions over the Hudson watershed and the rivers of New England, but the changing weather conditions have probably interfered with the ice harvest of those districts.

The following special reports have been received:

Albany, N. Y., January 17.—In the Hudson Valley the depth of snow ranges from 1 inch at Mechanicsville to 4 inches at Corinth; in the Mohawk Valley it averages 3 inches from Tribes Hill westward. In the Hudson River the ice averages 9 inches thick from Athens northward, while in the Mohawk it averages 7 inches thick.

Harrisburg, Pa., January 17.—In the west branch of the Susquehanna River the gorge broke on the morning of the 15th, the ice reaching here this morning on 11 1-2 feet of water. Ice movement began in the great gorge below Columbia on the afternoon of the 15th, and ice began to go over the McCall Ferry dam about 11 a. m., to-day. All streams are now falling above here.

Pittsburg, Pa., January 17.—During the past week high temperatures and rain caused all the snow on the ground in the watersheds of the Allegheny and Monongahela rivers to disappear. During the night of the 15th, however, light snow fell throughout the watersheds. The melting snow and moderately heavy rain caused the rivers to rise rapidly during the 13th and 14th, resulting in heights slightly above the flood stage here, and at Wheeling on the 15th.

Toledo, Ohio, January 17.—The ice in the Maumee River is broken up and moving.

P. C. DAY, *Chief of Division.*

DEPTH OF SNOW AND THICKNESS OF ICE AT 8 P. M., JANUARY 16, 1911.

Stations.	Snow.	Ice in rivers, harbors, etc.
Colorado.	*Inches*	*Inches*
Durango	T.	.....
Leadville	23	.....
Idaho.		
Boise	3	.....
Lewiston	T.	†
Pocatello	T.	.....
Illinois.		
Bloomington	2	.....
Chicago	T.	.....
La Salle	0	12.0
Peoria	1	6.0
Winnebago	2	.....
Iowa.		
Atlantic	T.	.....
Carroll	1	.....
Cedar Rapids	1	.....
Charles City	5	.....
Davenport	T.	18.5
Des Moines	4	10.0
Dubuque	1	15.5
Estherville	4	.....
Humboldt	4	.....
Iowa City	T.	.....
Keokuk	1	11.5
Sioux City	T.	15.0
Kansas.		
Concordia	T.	.....
Dodge City	T.	.....
Ellinwood	T.	.....
Iola	0	3.0
Manhattan	2	.....
Maine.		
Bangor	3	14.5
Buckfield	6	.....
Eastport	T.	11.0
Ellsworth	T.	.....
Greenville	18	24.0
Lewiston	2	13.0
Millinocket	19	.....
Orono	4	.....
Portland	1	0.0
Maryland.		
Oakland	T.	.....
Massachusetts.		
Adams	T.	.....
Concord	T.	.....
Fitchburg	T.	.....
Mansfield	T.	.....
Nantucket	T.	0.0
Michigan.		
Alpena	12	13.0
Ann Arbor	2	.....
Battle Creek	2	.....
Big Rapids	5	.....
Calumet	30	.....
Chatham	29	.....
Detroit	1	10.0
Escanaba	11	13.0
Grand Haven	3	0.0
Grand Marais	36	.....
Grand Rapids	3	.....
Houghton	29	12.0
Lansing	4	.....
Mackinaw	28	.....
Mancelona	34	.....
Manistee	8	.....
Marquette	38	*
Onaway	31	.....

Stations.	Snow.	Ice in rivers, harbors, etc.
Michigan—Cont'd.	*Inches*	*Inches*
Port Huron	6	11.0
Saginaw	T.	.....
St. Ignace	22	.....
Sault Ste. Marie	21	9.5
Minnesota.		
Angus	8	.....
Collegeville	6	.....
Duluth	15	24.0
Fergus Falls	9	.....
Fort Ripley	9	.....
Glencoe	4	.....
Grand Meadow	10	.....
Mankato	8	.....
Milan	3	.....
Minneapolis	5	.....
Moorhead	10	25.0
New Richland	6	.....
Reeds	7	.....
St. Paul	7	20.0
State Sanatorium	12	.....
Virginia	12	.....
Windom	6	.....
Missouri.	*	
Brunswick	T.	.....
Hannibal	T.	†
Kansas City	0	*
Maryville	1	.....
St. Joseph	3	†
St. Louis	T.	*
Unionville	2	.....
Montana.		
Havre	10	.....
Helena	7	.....
Kalispell	1	.....
Miles City	6	.....
Nebraska.		
Lincoln	T.	.....
Omaha	T.	9.0
St. Paul	T.	.....
Stanton	2	.....
York	T.	.....
Nevada.		
Reno	10	.....
Winnemucca	3	.....
New Hampshire.		
Bethlehem	4	.....
Concord	T.	12.0
Keene	T.	.....
New York.		
Albany	0	9.5
Beaver River	22	.....
Binghamton	T.	.....
Buffalo	2	8.5
Canton	3	.....
De Ruyter	5	.....
Ithaca	T.	.....
Lake Placid	12	.....
Ogdensburg	8	.....
Oswego	1	2.0
Plattsburg	6	.....
Rochester	2	†
Saranac Lake	12	.....
Syracuse	1	.....
Watertown	4	.....
North Dakota.		
Bismarck	13	29.0
Devils Lake	8	.....

Stations.	Snow.	Ice in rivers, harbors, etc.
North Dak.—Con.	*Inches*	*Inches*
Williston	5	20.0
Ohio.		
Canton	T.	.....
Cleveland	0	†
Sandusky	0	9.0
Toledo	0	4.5
Youngstown	T.	.....
Oregon.		
Portland	T.	0.0
Roseburg	T.	.....
Pennsylvania.		
Clarion	T.	.....
Cresson	1	.....
Drifton	T.	.....
Emporium	T.	.....
Franklin	T.	.....
Greensboro	T.	.....
Greenville	T.	.....
Harrisburg	0	*
Indiana	T.	.....
Johnstown	T.	.....
Meadville	T.	.....
Parkers Landing	T.	.....
Ridgway	1	.....
Saltsburg	T.	.....
Selinsgrove	T.	.....
Somerset	T.	.....
Warren	1	.....
West Newton	T.	.....
Rhode Island.		
Providence	T.	†
South Dakota.		
Huron	2	20.5
Pierre	0	19.5
Rapid City	T.	.....
Yankton	T.	16.5
Utah.		
Modena	T.	.....
Salt Lake City	T.	.....
Vermont.		
Brattleboro	0	11.0
Burlington	2	0.0
Northfield	7	.....
St. Johnsbury	8	.....
Washington.		
Seattle	T.	.....
Spokane	1	.....
Walla Walla	1	.....
West Virginia.		
Bayard	T.	.....
Elkins	T.	0.0
Fairmont	T.	.....
Wisconsin.		
Eau Claire	15	.....
Green Bay	8	6.5
Koepenick	18	.....
La Crosse	7	18.0
Madison	3	.....
Medford	13	.....
Milwaukee	T.	0.0
New London	10	.....
Sheboygan	3	.....
Spooner	10	.....
Viroqua	8	.....
Wausau	14	.....
Wyoming.		
Sheridan	1	.....
Yellowstone Park	19	.....

* Floating ice. † Shore ice. T. indicates trace.

U. S. DEPARTMENT OF AGRICULTURE,

WEATHER BUREAU.

SNOW AND ICE BULLETIN.

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Willis L. Moore, Chief U. S. Weather Bureau.

Trace
3"
6"
9"
12"
15"
18"
21"
24"
27"
30"
33"
36"
Trace
Trace
Trace

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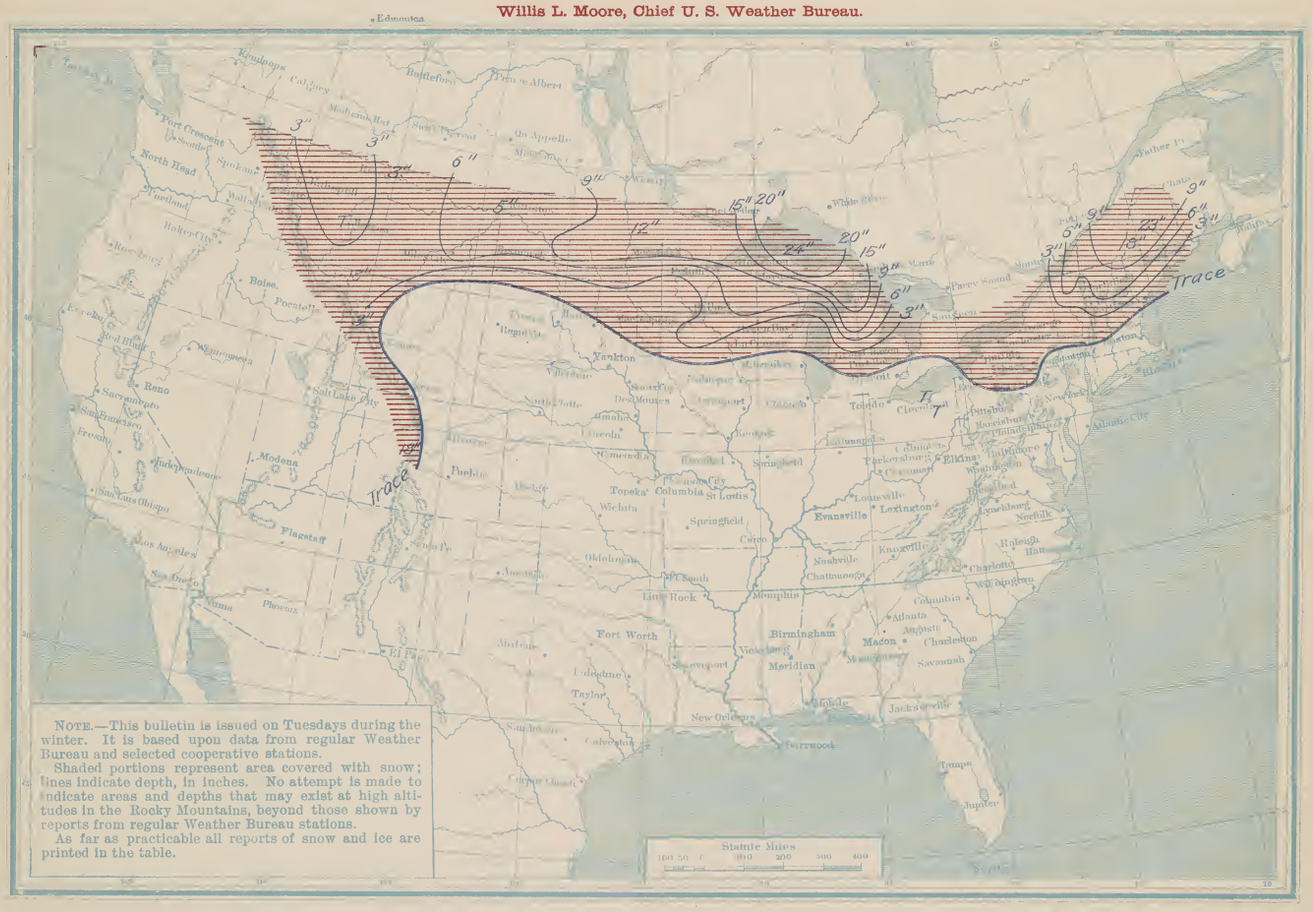

NOTE.—This bulletin is issued on Tuesdays during the winter. It is based upon data from regular Weather Bureau and selected cooperative stations.

Shaded portions represent area covered with snow; lines indicate depth, in inches. No attempt is made to indicate areas and depths that may exist at high altitudes in the Rocky Mountains, beyond those shown by reports from regular Weather Bureau stations.

As far as practicable all reports of snow and ice are printed in the table.

WASHINGTON, D. C., *January 31, 1911.*

DEPTH OF SNOW.

For the week as a whole there was considerable precipitation from the Mississippi Valley eastward to the Atlantic, except over the Gulf States, and also generally over the Pacific coast States, the rainfall being especially heavy over nearly all portions of California, where it was much needed.

There was apparently but little snow during the week, however, in any section of the country, save in the northeastern portions of New England and at a few points in Minnesota, North Dakota, and Montana.

The comparatively mild weather during portions of the week, together with more or less rain, carried off practically all the considerable snow covering present a week ago in portions of the Ohio Valley and Middle Atlantic States.

Over the upper Mississippi Valley and in the upper Lake region there was also a large decrease in the depth of the snow covering, due to settling, but with probably little loss of water content.

In the mountain districts of the West there was a general decrease at all the lower elevations and it is probable that but little snow occurred even in the higher ranges of the Rocky Mountain districts.

In the mountains of California, Oregon, and Washington it is probable that considerable snow occurred, but it appears to have melted at all the lower elevations.

Over New England there was an increase in depth of from 4 to 6 inches in Maine, with less amounts in the northern portions of New Hampshire and Vermont.

Practically no snow remains on the ground in any of the winter wheat-growing States, but over the districts from Montana eastward to the upper Lakes there is still a considerable covering.

In the mountain districts of the West there is still a general and probably large deficiency in the amount of snow usually accumulated at this period of the winter.

THICKNESS OF ICE.

Moderately cold weather prevailed during the week in the upper Missouri Valley and some additional ice formed over that portion of the river and its tributaries. In the districts from the upper Mississippi Valley eastward, except in extreme northern portions, warmer weather with rain prevailed, and much of the ice in the smaller streams and over the lower Lakes broke up, and in the larger streams the thickness was considerably reduced. In the Missouri the ice remains intact from Omaha northward, the thickness ranging from 9 to 33 inches. In the Mississippi the thickness ranges from 10 inches at Keokuk to 18.5 inches at St. Paul, the decrease in thickness during the week ranging from 1 to 5 inches.

No marked change occurred in the ice conditions in the harbors of Lake Superior or in the northern portions of Lake Michigan; in Lake Huron, however, and the lower Lakes, there was a general decrease, ranging from 1 to 9 inches.

The Ohio River and its tributaries continue free of ice, as well as the rivers of the Middle Atlantic States, as far north as the Hudson. In the latter river a small decrease was noted in the thickness of ice, as well as in some of the rivers of southern New England. In New England the weather conditions were generally favorable for the ice harvest and other winter occupations.

The following special reports have been received:

Gardiner, Me., January 29.—In the Kennebec Valley the present conditions are very favorable for all winter operations.

Hartford, Conn., January 31.—The snow covering in the Connecticut Valley has increased slightly during the week, although there is even now none of any consequence south of the Massachusetts line.

Albany, N. Y., January 31.—In the Hudson Valley the depth of snow ranges from a trace at this place to 1 inch at Thurman. In the Mohawk Valley there is no snow, except 4 inches at Tribes Hill. In the Hudson River the thickness of ice ranges from 6 inches at Athens to 14 inches at Corinth, while in the Mohawk River it averages 10 inches thick.

Pittsburg, Pa., January 30.—Warren, Pa., is the only station within the watersheds tributary to the upper Ohio River which reports snow on the ground.

P. C. DAY, *Chief of Division.*

DEPTH OF SNOW AND THICKNESS OF ICE AT 8 P. M., JANUARY 30, 1911.

Stations.	Snow.	Ice in rivers, harbors etc.	Stations.	Snow.	Ice in rivers, harbors etc.	Stations.	Snow.	Ice in rivers, harbors etc.
Colorado.	*Inches*	*Inches*	*Michigan*—Cont'd	*Inches*	*Inches*	*New York*—Cont'd	*Inches*	*Inches*
Leadville	18	.....	Port Huron	T.	10.0	Oswego	T.	0.0
Illinois.			St. Ignace	18	.....	Rochester	T.	0.0
La Salle	0	*	Sault Ste. Marie	13	15.0	Saranac Lake	6	.....
Peoria	0	3.5	*Minnesota.*			Syracuse	2	.....
Iowa.			Angus	12	.....	Watertown	2	.....
Charles City	T.	.....	Collegeville	1	.....	Watkins	T.	.....
Davenport	0	15.0	Duluth	10	25.0	*North Dakota.*		
Des Moines	0	10.5	Fergus Falls	8	.....	Bismarck	9	33.0
Dubuque	0	13.5	Fort Ripley	T.	.....	Devils Lake	7	.....
Estherville	T.	.....	Glencoe	2	.....	Williston	5	24.0
Forest City	1	.....	Grand Meadow	3	.....	*Ohio.*		
Keokuk	0	10.0	Mankato	5	.....	Canton	T.	.....
Sioux City	0	13.5	Minneapolis	T.	.....	Cleveland	T.	0.0
Maine.			Moorhead	10	28.0	*Pennsylvania.*		
Bangor	5	19.0	Reeds	T.	.....	Drifton	T.	.....
Buckfield	7	.....	St. Paul	1	18.5	Emporium	T.	.....
Eastport	1	10.0	State Sanatorium	10	.....	Erie	0	†
Gardiner	6	12.0	Virginia	12	.....	Warren	1	.....
Greenville	19	25.5	Windom	1	.....	*South Dakota.*		
Lewiston	4	18.0	*Missouri.*			Huron	T.	16.0
Millinocket	23	.....	Hannibal	0	*	Pierre	0	24.0
Orono	6	...	St. Joseph	0	*	Yankton	0	17.0
Portland	4	0.0	*Montana.*			*Vermont.*		
Massachusetts.			Havre	3	.....	Brattleboro	1	11.5
Amherst	T.	.....	Helena	T.	.....	Burlington	1	7.0
Michigan.			Miles City	6	.....	Northfield	5	.....
Alpena	6	0.0	*Nebraska.*			St. Johnsbury	8	.....
Battle Creek	T.	.....	Omaha	0	9.0	*Wisconsin.*		
Cadillac	14	.....	*New Hampshire.*			Eau Claire	6	.....
Calumet	24	.....	Bethlehem	2	.....	Green Bay	2	9.0
Chatham	20	.....	Concord	T.	12.0	Koepenick	7	.....
Detroit	0	8.0	Hanover	6	.....	La Crosse	0	19.0
Escanaba	7	16.0	Keene	T.	.....	Madison	T.	.....
Grand Haven	T.	0.0	*New York.*			Medford	7	.....
Grand Rapids	T.	.....	Albany	T.	11.0	Sheboygan	T.	.....
Houghton	23	0.0	Binghamton	T.	.....	Spooner	5	.....
Lansing	T.	.....	Buffalo	1	9.0	Viroqua	2	.....
Lewiston	14	.....	Canton	1	.....	Wausau	7	.....
Mackinaw	18	.....	De Ruyter	T.	.....	*Wyoming.*		
Mancelona	17	.....	Herkimer	T.	.....	Sheridan	T.	.....
Manistee	T.	.....	Ithaca	T.	.....	Yellowstone Park	18	.....
Marquette	25	†	Malone	1	.....			

* Floating ice. † Shore ice. T. indicates trace.

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As far as practicable all reports of snow and ice are printed in the table.
Trace
Trace

WASHINGTON, D. C., *February 7, 1911.*

DEPTH OF SNOW.

Considerable snow occurred during the early part of the week over the districts near the northern boundary from the Rocky Mountains eastward to New England, and there was probably considerable additional snow in portions of the high Sierra Nevada ranges. Practically no snow occurred over the central districts until toward the end of the week, when a rather extensive storm area moved from the middle Plains region during Sunday, reaching the lower Lakes by 8 p. m. of Monday. It was accompanied by snow from the lower Missouri Valley eastward to the middle Atlantic coast and New England, the fall being quite heavy over the middle Missouri and middle Mississippi valleys, and from the Lake region eastward, and in portions of northern Virginia, central Maryland, and southern Pennsylvania.

The net result of the snowfall for the week is an increase of from 3 to 10 or more inches in the depth of the snow covering in all districts where the ground was covered at the end of the previous week, and a considerable extension of the area to the southward of the area covered last week. Over the northern districts the amount of snow now covering the ground ranges from about 1 foot in the northern portion of Montana to about 3 feet in depth over the northern Peninsula of Michigan, with similar depths in northern New York and the interior of New England. In the middle Missouri and middle Mississippi valleys nearly 1 foot of snow now covers the ground, and in portions of northern Virginia, western Maryland and southern Pennsylvania the depths range from 3 to 7 inches.

Some heavy falls of snow occurred during the week in portions of the northern Rocky Mountain region, but otherwise in the Rocky Mountain and Plateau regions there appears to have been but little snow, and the accumulation of snow in these districts still appears to be deficient.

ICE IN RIVERS AND HARBORS.

With moderately cold weather prevailing over the more northern districts during most of the week some increase in the thickness of ice occurred in most of the streams and lakes of those sections.

In the Missouri River slight decreases occurred at Omaha and Sioux City, but in the upper portions of the river there was a slight increase. The thickness now ranges from 8.5 inches at Omaha to nearly 3 feet at Bismarck.

In the upper Mississippi and its tributaries there was a general decrease at nearly all points and the river appears to be open from Keokuk southward.

There was a small increase in the amount of ice in all portions of the upper Lake region, except in the southern portion of Lake Michigan where but little ice has yet formed. In the lower Lakes there were small increases in some of the harbors, but in others, especially those of Lake Erie, no ice was reported.

The Ohio River and its tributaries appear to be entirely free of ice, as are the rivers of the Atlantic coast south of the Hudson.

Over the last-named river and those of New England there was a general increase of several inches in the thickness, and the average now ranges from about 1 foot to more than 2 feet in thickness.

On account of the changing weather of the past week it appears that the harvesting of the ice crop in the last-named district has been difficult and expensive.

The following special reports have been received:

Gardiner, Me., February 6.—The extreme changes in the weather are making the harvesting of the ice crop difficult, slow, and expensive.

Hartford, Conn., February 7.—In the Connecticut Valley the depth of snow ranges from 2 to 4 inches in Massachusetts and Connecticut, but in the upper valley it ranges from 10 inches at Wells River, Vt., to 20 inches at the Canada line. The present storm is rapidly increasing the depth of snow.

Albany, N. Y., February 7.—In the Hudson Valley the depth of snow ranges from a trace at Athens to 8 inches at Corinth; in the Mohawk Valley it ranges from half an inch at Schenectady to 5 inches at Utica. In the Hudson River the thickness of ice ranges from 8 inches at Athens to 14 inches at Corinth, while in the Mohawk it averages 12 inches thick.

Pittsburg, Pa., February 6.—The ground over the Allegheny and Monongahela watersheds was free from snow during the week up to Sunday night, the 5th, but early Monday morning heavy snow began to fall.

P. C. DAY, *Chief of Division.*

DEPTH OF SNOW AND THICKNESS OF ICE AT 8 P. M., FEBRUARY 6, 1911.

Stations.	Snow.	Ice in rivers, harbors, etc.
Colorado.	*Inches*	*Inches*
Durango	T.	.....
Leadville	20	.....
Connecticut.		
Hartford	2	†
New Haven	2	.....
West Simsbury	1	.....
Delaware.		
Delaware City	2	.....
Millsboro	1	.....
District of Columbia.		
Washington	4	0.0
Idaho.		
Wallace	18	...
Illinois.		
Bloomington	3	.....
Chicago	7	.....
Dixon	8	.....
Dwight	4	.....
La Salle	6	*
Martinton	4	.....
Monmouth	6	.....
Peoria	4	0.0
Springfield	1	.....
White Hall	1	.....
Winnebago	12	.....
Indiana.		
Knox	5	.....
Marion	4	.....
Winona Lake	7	.....
Iowa.		
Atlantic	6	.....
Cedar Rapids	6	.....
Charles City	11	.....
Davenport	6	16.5
Des Moines	6	9.0
Dubuque	8	13.0
Estherville	5	.....
Forest City	4	.....
Humboldt	8	.....
Keokuk	4	†
Sioux City	11	12.0
Waterloo	11	.....
Maine.		
Bangor	4	20.0
Bucktield	15	.....
Cornish	19	.....
Eastport	T.	11.5
Ellsworth	8	.....
Gardiner	13	13.0
Greenville	38	25.0
Lewiston	12	19.5
Millinocket	32	.....
Orono	10	.....
Portland	8	3.0
Presque Isle	20	.....
Maryland.		
Baltimore	6	0.0
Darlington	4	.....
Easton	2	.....
Frederick	6	.....
Massachusetts.		
Adams	2	.....
Concord	2	.....
Fitchburg	3	.....
Nantucket	1	0.0
Michigan.		
Alpena	9	3.0
Ann Arbor	2	.....
Big Rapids	5	.....
Calumet	34	.....
Chatham	20	.....
Detroit	12	8.0
Escanaba	10	17.0
Grand Haven	5	0.0
Grand Marais	28	.....
Grand Rapids	6	.....
Michigan—Cont'd		
Houghton	36	14.0
Iron Mountain	10	.....
Iron River	16	.....
Lansing	6	.....
Lewiston	20	.....
Mackinaw	26	.....
Mancelona	20	.....
Manistee	4	.....
Marquette	34	6.0
Port Huron	6	10.0
Saginaw	6	.....
St. Ignace	22	.....
Sault Ste. Marie	23	17.0
South Haven	4	.....
Minnesota.		
Angus	18	.....
Collegeville	4	.....
Duluth	16	27.5
Fergus Falls	12	.....
Fort Ripley	2	.....
Glencoe	3	.....
Hinckley	6	.....
Milan	4	.....
Minneapolis	4	.....
Moorhead	13	30.0
New Richland	6	.....
Redwood Falls	8	.....
Reeds	3	.....
St. Paul	4	18.5
State Sanatorium	14	.....
Virginia	18	.....
Windom	6	.....
Missouri.		
Hannibal	1	*†
St. Joseph	T.	*
Montana.		
Havre	10	.....
Helena	3	.....
Miles City	6	.....
Nebraska.		
Lincoln	1	.....
Omaha	3	8.5
St. Paul	4	.....
Valentine	4	.....
Nevada.		
Tonopah	1	.....
New Hampshire.		
Bethlehem	6	.....
Concord	6	13.5
Keene	4	.....
New Jersey.		
Atlantic City	2	.....
Bridgeton	2	.....
Cape May	1	0.0
Flemington	1	.....
Hightstown	1	.....
Tuckerton	2	.....
New York.		
Albany	T.	13.5
Binghamton	3	.....
Buffalo	7	10.0
Canton	13	.....
Herkimer	4	.....
Ithaca	6	.....
Lake Placid	30	.....
Le Roy	3	.....
Malone	6	.....
New York	3	.....
Ogdensburg	16	.....
Oswego	4	2.0
Plattsburg	12	.....
Poughkeepsie	2	.....
Rochester	4	*
Saranac Lake	12	.....
Syracuse	3	.....
Watertown	4	.....
North Dakota.		
Bismarck	11	35.0
Devils Lake	16	.....
Williston	10	24.0
Ohio.		
Bangorville	3	.....
Cadiz	3	.....
Canton	5	.....
Cleveland	3	0.0
Greenville	2	.....
Philo	2	.....
Sandusky	4	0.0
Tiffin	6	.....
Toledo	6	*
Wauseon	7	.....
Youngstown	5	.....
Pennsylvania.		
Drifton	1	.....
Emporium	2	.....
Erie	1	2.0
Greensboro	2	.....
Greenville	3	.....
Harrisburg	4	*
Marion	7	.....
Muncy Valley	2	.....
Parkers Landing	4	.....
Philadelphia	3	0.0
Pittsburg	3	0.0
Ridgway	4	.....
Somerset	6	.....
Warren	1	.....
Rhode Island.		
Block Island	2	0.0
Kingston	1	.....
Narragansett Pier	2	.....
South Dakota.		
Huron	6	21.0
Pierre	4	24.0
Yankton	10	17.5
Vermont.		
Brattleboro	5	14.5
Burlington	8	10.0
Northfield	10	.....
St. Johnsbury	15	.....
Virginia.		
Dale Enterprise	1	.....
Fredericksburg	2	.....
Lincoln	4	.....
Lynchburg	T.	0.0
Mount Weather	3	.....
Washington.		
Spokane	T.	.....
Walla Walla	1	.....
West Virginia.		
Bayard	2	.....
Fairmont	1	.....
Rowlesburg	4	.....
Wisconsin.		
Ashland	12	.....
Eau Claire	4	.....
Green Bay	4	11.0
Koepenick	8	.....
La Crosse	6	18.0
Lakemills	5	.....
Madison	7	.....
Medford	7	.....
Milwaukee	8	0.0
New London	6	.....
Racine	8	.....
Sheboygan	5	.....
Spooner	4	.....
Viroqua	7	.....
Wausau	8	.....
Wyoming.		
Yellowstone Park	18	.....

*Floating ice. †Shore ice. T. indicates trace.

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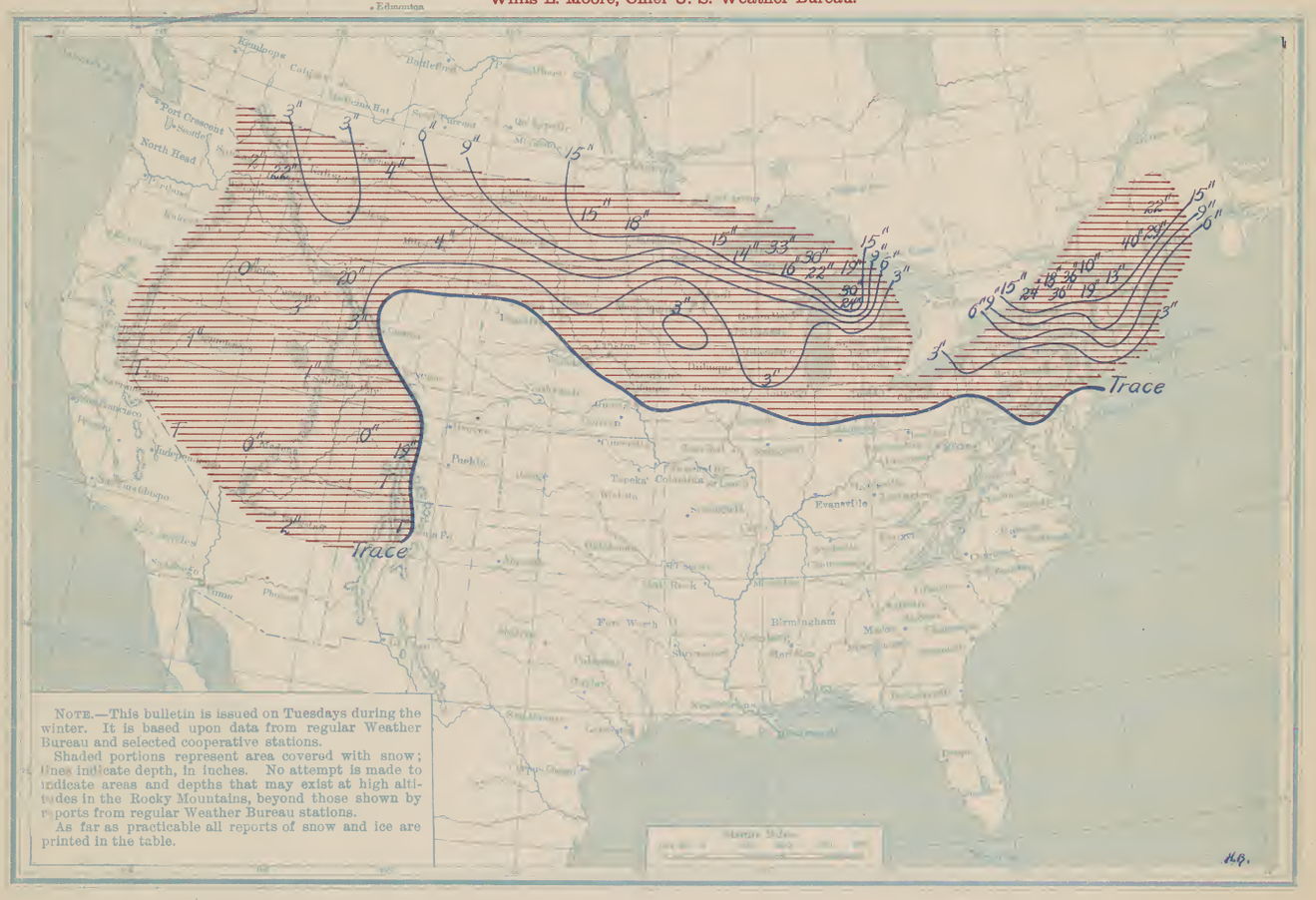
U. S. DEPARTMENT OF AGRICULTURE,
WEATHER BUREAU.

SNOW AND ICE BULLETIN.

PUBLISHED BY AUTHORITY OF THE SECRETARY OF AGRICULTURE.
Willis L. Moore, Chief U. S. Weather Bureau.



NOTE.—This bulletin is issued on Tuesdays during the winter. It is based upon data from regular Weather Bureau and selected cooperative stations.

Shaded portions represent area covered with snow; lines indicate depth, in inches. No attempt is made to indicate areas and depths that may exist at high altitudes in the Rocky Mountains, beyond those shown by reports from regular Weather Bureau stations.

As far as practicable all reports of snow and ice are printed in the table.

WASHINGTON, D. C., *February 14, 1911.*

DEPTH OF SNOW.

The general area of snow and rain, central in the lower Lake region at the close of the preceding week, moved to New England during Tuesday, accompanied by rather heavy snows over the northern portion of the country from the Lake region eastward. Aside from the above only light amounts of snow occurred in any district until near the end of the week, when local snows occurred in portions of the Plateau and southern Rocky Mountain region.

The warm weather prevailing during much of the week carried off a large amount of the snow covering the ground at the end of the preceding week from the middle Missouri Valley eastward to the Ohio Valley and Middle Atlantic States.

There was a small increase in the depth of the snow covering in portions of the upper Lake region and a considerable increase over northern New York and the greater part of New England.

There was some increase in the amount of snow reported from points in the Rocky Mountain and Plateau regions, but no general or heavy fall of snow appears to have occurred in those districts and the accumulated amounts of snow in those regions are still generally below the normal.

Compared with the same date last year there is now much less snow over the Mississippi and Ohio valleys, lower Lake region and the Atlantic coast States; about the same amount in the upper Lake region and northern New York, and slightly more in portions of northern New England.

ICE IN RIVERS AND HARBORS.

With moderate weather prevailing in the great central valleys, there was a general reduction in the thickness of the ice in the rivers of those districts, except over their extreme northern courses where small increases occurred. In portions of the lower Lake region and generally over New England there was a small increase in the thickness of ice.

The Missouri is closed from Omaha northward, the thickness ranging from 5 inches to nearly 3 feet.

There was some decrease in the amount of ice in the Mississippi throughout nearly its entire course, but it is still closed to the northward of Keokuk.

In the Lake region small increases occurred in some of the harbors, while in others equal decreases occurred, the average conditions showing a slight increase during the week.

The Ohio is open throughout its course and likewise the rivers of the Middle Atlantic States south of the Hudson.

In the last-named river and its tributaries the ice harvest is progressing under generally favorable conditions, as also in New England, where it has been completed in some sections and is progressing under favorable conditions in others.

Compared with last year there is somewhat less ice in all districts and much less in the lower Lake region and portions of the Middle Atlantic States.

The following special reports have been received:

Gardiner, Me., February 13.—In the Kennebec Valley favorable weather continues for all winter operations.

Brattleboro, Vt., February 13.—The ice harvest has ended here.

Hartford, Conn., February 14.—In the Connecticut Valley the depth of snow ranges from 7 to 18 inches in Vermont and New Hampshire, from 3 to 9 inches in Massachusetts, and from 2 to 4 inches in Connecticut.

Albany, N. Y., February 14.—In the Hudson Valley the depth of snow ranges from 2 inches at Athens to 12 inches at Thurman; in the Mohawk Valley it averages 7 inches. In the Hudson River the ice averages 12 inches thick, while in the Mohawk it averages 11 inches; in this vicinity ice harvest is in full blast.

Pittsburg, Pa., February 13.—During the past week most of the snow on the ground over the watersheds tributary to the upper Ohio River disappeared, except over the upper Allegheny watershed, where there was a slight increase.

P. C. DAY, *Chief of Division.*

DEPTH OF SNOW AND THICKNESS OF ICE AT 8 P. M., FEBRUARY 13, 1911.

Stations.	Snow.	Ice in rivers, harbors, etc.
Arizona.	*Inches*	*Inches*
Flagstaff	2	.....
Colorado.		
Durango	T.	.....
Leadville	19	.....
Connecticut.		
Hartford	3	0.0
New Haven	1	.....
West Simsbury	4	.....
Idaho.		
Pocatello	3	.....
Wallace	22	.....
Illinois.		
Chicago	1	.....
Dixon	3	.....
Dwight	T.	.....
La Salle	1	*
Winnebago	4	.....
Indiana.		
Knox	1	.....
Marion	T.	.....
Iowa.		
Cedar Rapids	T.	.....
Charles City	T.	.....
Creston	T.	.....
Davenport	T.	17.0
Des Moines	T.	8.5
Dubuque	1	.....
Keokuk	0	†
Sioux City	1	13.0
Waterloo	1	.....
Maine.		
Bangor	5	20.0
Cornish	22	.....
Eastport	2	15.0
Ellsworth	17	.....
Gardiner	18	14.0
Greenville	40	26.0
Lewiston	15	20.0
Millinocket	29	.....
Orono	15	.....
Portland	11	2.0
Presque Isle	22	.....
Maryland.		
Darlington	T.	.....
Massachusetts.		
Adams	6	.....
Amherst	4	.....
Boston	4	.....
Fitchburg	8	.....
Mansfield	7	.....
Nantucket	T.	0.0
Michigan.		
Alpena	2	7.0
Battle Creek	2	.....
Big Rapids	T.	.....
Cadillac	14	.....
Calumet	34	.....
Detroit	2	6.0
Escanaba	9	17.0
Grand Haven	T.	0.0
Grand Rapids	1	.....
Houghton	33	13.0
Iron Mountain	11	.....
Iron River	16	.....
Lansing	1	.....
Lewiston	19	.....
Michigan—Cont'd		
Mackinaw	30	.....
Mancelona	24	.....
Manistee	T.	.....
Marquette	30	2.5
Port Huron	T.	13.0
Rock	22	.....
St. Ignace	27	.....
Sault Ste. Marie	19	18.0
South Haven	2	.....
Minnesota.		
Angus	18	.....
Collegeville	2	.....
Duluth	13	32.0
Fergus Falls	11	.....
Fort Ripley	2	.....
Glencoe	T.	.....
Grand Meadow	3	.....
Hinckley	6	.....
Mankato	4	.....
Milan	T.	.....
Minneapolis	T.	.....
Moorhead	12	32.0
New Richland	2	.....
Redwood Falls	1	.....
Reeds	T.	.....
St. Paul	T.	16.0
Virginia	15	.....
Windom	T.	.....
Montana.		
Havre	4	.....
Helena	2	.....
Miles City	4	.....
Nebraska.		
Omaha	0	5.0
Nevada.		
Reno	T.	.....
Tonopah	T.	.....
Winnemucca	1	.....
New Hampshire.		
Bethlehem	13	.....
Concord	11	14.0
Hanover	16	.....
Keene	9	.....
New Jersey.		
Charlotteburg	T.	.....
Flemington	T.	.....
Newark	T.	.....
New Mexico.		
Santa Fe	T.	.....
New York.		
Albany	2	14.0
Beaver River	36	.....
Binghamton	2	.....
Buffalo	4	10.0
Canton	18	.....
Cutchogue	1	.....
De Ruyter	10	.....
Herkimer	8	.....
Ithaca	1	.....
Lake Placid	36	.....
Malone	18	.....
Ogdensburg	24	.....
Oswego	8	7.0
Rochester	4	3.0
Saranac Lake	16	.....
Saratoga Springs	7	.....
New York—Cont'd		
Setauket	1	.....
Syracuse	5	.....
North Dakota.		
Bismarck	9	33.0
Devils Lake	15	.....
Williston	10	24.0
Ohio.		
Bangorville	T.	.....
Cadiz	T.	.....
Garrettsville	T.	.....
Sandusky	T.	5.0
Tiffin	T.	.....
Toledo	1	2.0
Wauseon	2	.....
Oregon.		
Roseburg	T.	.....
Pennsylvania.		
Clarion	4	.....
Cresson	1	.....
Drifton	2	.....
Ephrata	T.	.....
Erie	T.	†
Franklin	1	.....
Harrisburg	T.	0.0
Johnstown	T.	.....
Meadville	1	.....
Muncy Valley	2	.....
Parkers Landing	1	.....
Ridgway	1	.....
Saltsburg	1	.....
Selinsgrove	2	.....
Warren	3	.....
West Newton	T.	.....
Rhode Island.		
Block Island	1	0.0
Narragansett Pier	2	.....
Providence	4	0.0
South Dakota.		
Huron	3	21.0
Pierre	T.	25.0
Yankton	1	16.0
Utah.		
Salt Lake City	1	.....
Vermont.		
Brattleboro	7	14.0
Burlington	10	13.5
Northfield	19	.....
Washington.		
Spokane	2	.....
Wisconsin.		
Ashland	14	.....
Eau Claire	3	.....
Green Bay	1	8.0
Koepenick	7	.....
La Crosse	0	17.0
Lakemills	T.	.....
Madison	T.	.....
Medford	5	.....
Milwaukee	3	0.0
New London	T.	.....
Racine	4	.....
Sheboygan	3	.....
Viroqua	3	.....
Wausau	3	.....
Wyoming.		
Sheridan	T.	.....
Yellowstone Park	20	.....

*Floating ice. †Shore ice. T. indicates trace.

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WEATHER BUREAU.

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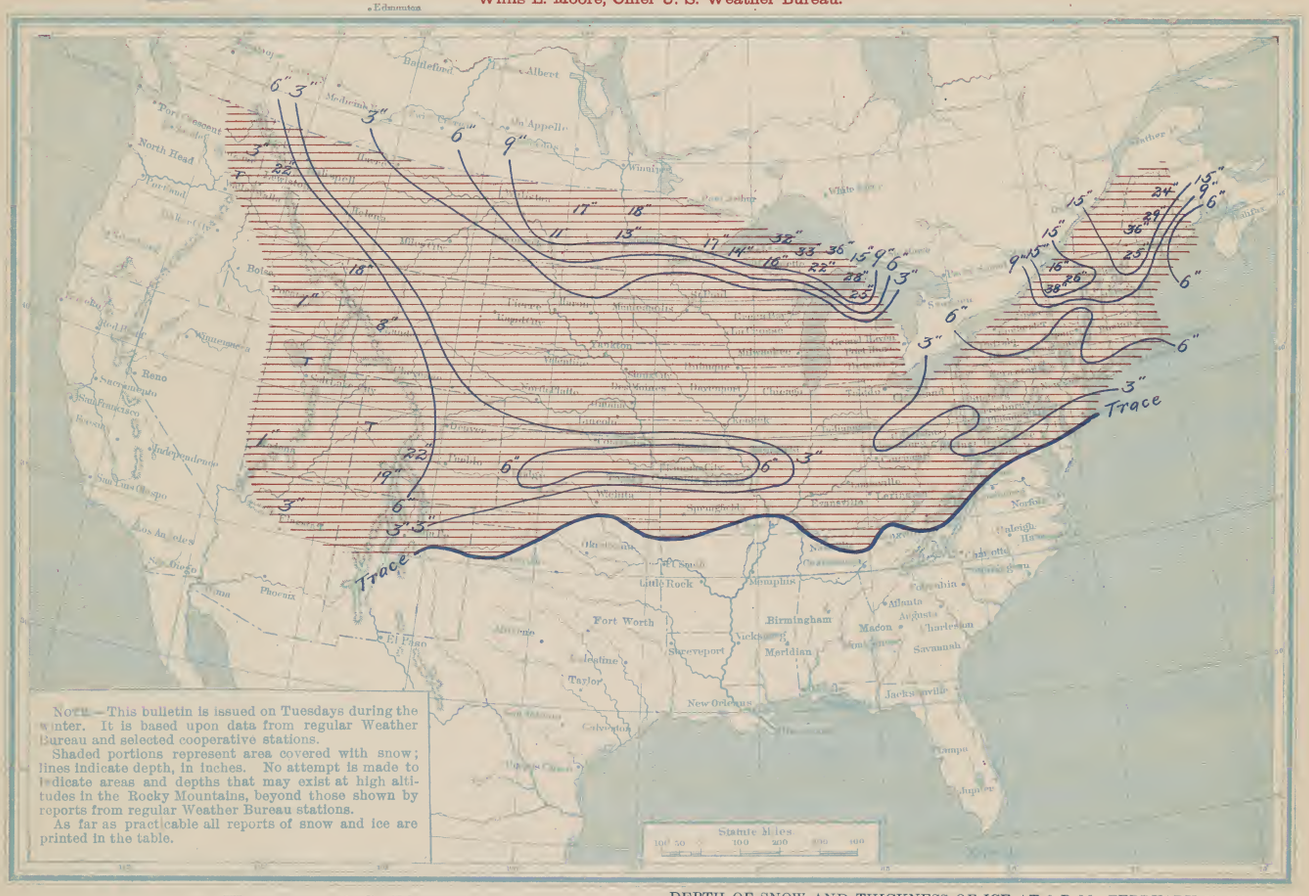

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As far as practicable all reports of snow and ice are printed in the table.

WASHINGTON, D. C., *February 21, 1911.*

DEPTH OF SNOW.

The week opened with a storm of considerable intensity central in the middle Mississippi Valley with light snow falling from the upper Lakes to central New England, and snow was falling also in portions of the Plateau and Pacific coast States.

The storm in the Mississippi Valley moved rapidly eastward to the Middle Atlantic States during Wednesday without any considerable amount of snowfall, but in the mountain districts of the West local snows continued during much of the early part of the week.

Unsettled weather with local snows and occasional heavy rain developed over the Southwest about Saturday, and during Sunday and Monday the storm moved to the middle Atlantic coast, accompanied by considerable rain and snow over the southern Plains States, the lower Missouri, middle Mississippi, and Ohio valleys, and Middle Atlantic States. The snowfall from the latter storm was quite heavy in a narrow strip from Colorado eastward to the middle Mississippi Valley, the depths over much of Kansas and Missouri reaching from 4 to 9 inches.

The snow on the ground at the end of the preceding week in the upper Ohio Valley and portions of the middle Atlantic States had generally disappeared by the middle of the past week, but the snow of Sunday night and Monday covered those districts to depths ranging from 2 to 6 inches.

Slight increases occurred in the depth of the snow covering over the upper Lake region and thence westward to central North Dakota, and there appears to have been considerable snow in the mountain regions of Wyoming, Colorado, and the adjoining portions of New Mexico, Arizona, and Utah. There was a general reduction in the depth of the snow cover in central and northern New England, northern New York, in the vicinity of Lake Michigan, and in the upper Mississippi Valley, where but little snow occurred during the week and warm weather caused the settling of that which already covered the ground.

The snowfall during the week in the southern Rocky Mountain region greatly improved the outlook for water for irrigation in that section, where there had been a marked deficiency in snowfall; and the prospects for an average flow of water during the coming summer have been much improved.

ICE IN RIVERS AND HARBORS.

The continuation of moderate weather in the Mississippi and Ohio valleys and Lake region prevented the formation of any appreciable amount of ice in those regions, and a considerable amount of that reported previously in the Mississippi River broke up during the week and moved out, and the river is now open from Dubuque southward.

In the Missouri River some ice disappeared from the lower portions but, on account of the cold weather of the last few days in the northwest, some increase has occurred in the amount of ice in that region, and it is now from 2 to 3 feet in thickness in the upper portion of that river, in the Red River of the North and in other streams of that vicinity.

In the Lake region small increases occurred over the eastern portion of Lake Superior and in the northern portions of Lakes Huron and Michigan; elsewhere there was a general decrease as compared with last week.

The following special reports have been received:

Gardiner, Me., February 20.—In Maine the ice crop is housed and other winter operations are being successfully carried on.

Albany, N. Y., February 21.—In the Hudson and Mohawk valleys the depth of snow averages 5 inches. In the Hudson River the ice averages 12 inches thick; in the Mohawk it averages 10 inches.

Pittsburg, Pa., February 20.—The snow that was on the ground on the 13th disappeared entirely by the 17th. On the 19th snow began falling, and by 8 a. m. to-day the depths exceeded 4 inches over the watersheds of the Beaver and the central portion of the Allegheny, and in the mountains of the east; but less than 2 inches covers the ground in the Monongahela Valley and the central portion of the Youghiogheny.

Dubuque, Iowa, February 20.—The ice in the Mississippi River below the drawbridge went out on the 17th, but the river is still frozen over above the bridge.

P. C. DAY, *Chief of Division.*

DEPTH OF SNOW AND THICKNESS OF ICE AT 8 P. M., FEBRUARY 20, 1911.

Stations.	Snow.	Ice in rivers, harbors, etc.
Arizona.	*Inches*	*Inches*
Flagstaff	3	.....
Arkansas.		
Bentonville	T.	.....
Colorado.		
Denver	4	.....
Durango	19	.....
Leadville	22	.....
Pueblo	4	.....
Connecticut.		
Hartford	6	10.5
New Haven	6	.....
West Cornwall	6	.....
West Simsbury	5	.....
District of Columbia.		
Washington	2	0.0
Idaho.		
Pocatello	1	.....
Wallace	22	.....
Illinois.		
Bloomington	1	.....
Chicago	1	.....
Hillsboro	7	.....
Monmouth	1	.....
New Burnside	1	.....
Olney	4	.....
Peoria	2	0.0
Springfield	1	.....
White Hall	5	.....
Indiana.		
Indianapolis	1	.....
Knox	2	.....
Marion	1	.....
Iowa.		
Davenport	T.	*
Des Moines	T.	5.0
Keokuk	1	0.0
Sioux City	T.	12.5
Kansas.		
Dodge City	7	.....
McPherson	3	.....
Manhattan	5	.....
Topeka	5	.....
Wallace	4	.....
Wichita	1	.....
Kentucky.		
Beattyville	1	.....
Louisville	T.	0.0
Maine.		
Bangor	4	20.0
Buckfield	25	.....
Cornish	20	.....
Eastport	1	20.5
Ellsworth	15	.....
Gardiner	16	15.0
Greenville	36	25.5
Lewiston	10	22.0
Millinocket	29	.....
Orono	16	.....
Portland	11	0.0
Presque Isle	24	.....
Maryland.		
Baltimore	2	0.0
Frederick	3	.....
Massachusetts.		
Adams	6	.....
Amherst	3	.....
Boston	4	.....
Fitchburg	7	.....
Nantucket	8	0.0
Michigan.		
Alpena	6	9.0
Ann Arbor	2	.....
Battle Creek	2	.....
Cadillac	16	.....
Calumet	35	.....
Chatham	23	.....
Michigan—Cont'd		
Detroit	T.	6.0
Escanaba	10	18.0
Grand Marais	36	.....
Houghton	32	12.5
Iron River	16	.....
Ironwood	25	.....
Mackinaw	28	.....
Mancelona	22	.....
Marquette	33	7.0
Port Huron	T.	6.0
Rock	22	.....
St. Ignace	29	.....
Sault Ste. Marie	15	18.0
Minnesota.		
Angus	18	.....
Duluth	17	33.0
Hinckley	5	.....
Moorhead	13	33.0
Redwood Falls	2	.....
St. Paul	T.	13.0
Missouri.		
Brunswick	9	.....
Columbia	7	.....
Hannibal	2	*
Ironton	2	.....
Kansas City	8	0.0
Lamonte	7	.....
Olden	1	.....
Pacific	6	.....
St. Joseph	2	*
St. Louis	6	0.0
Springfield	1	.....
Unionville	3	.....
Montana.		
Havre	4	.....
Helena	2	.....
Nebraska.		
Minden	1	.....
North Platte	1	.....
Omaha	0	4.0
Valentine	1	.....
New Hampshire.		
Bethlehem	9	.....
Concord	10	17.0
Hanover	13	.....
New Jersey.		
Atlantic City	2	.....
Bridgeton	2	.....
Charlotteburg	3	.....
Hightstown	5	.....
Newark	5	.....
Tuckerton	2	.....
New Mexico.		
Santa Fe	3	.....
New York.		
Albany	2	14.0
Beaver River	38	.....
Binghamton	6	.....
Buffalo	6	9.5
Canton	8	.....
De Ruyter	8	.....
Ithaca	7	.....
Lake Placid	26	.....
Le Roy	6	.....
New York	5	.....
Oswego	7	7.0
Plattsburg	12	.....
Port Jervis	5	.....
Rochester	8	0.0
Saranac Lake	16	.....
Setauket	4	.....
Syracuse	8	.....
North Carolina.		
Asheville	T.	.....
North Dakota.		
Bismarck	11	36.0
North Dak.—Con.		
Devils Lake	17	.....
Williston	8	24.5
Ohio.		
Bangorville	2	.....
Cadiz	4	.....
Canton	4	.....
Cincinnati	3	0.0
Cleveland	3	*
Columbus	4	.....
Dayton	4	.....
Garrettsville	3	.....
Sandusky	1	*
Tiffin	1	.....
Wauseon	2	.....
Youngstown	6	.....
Pennsylvania.		
Drifton	4	.....
Emporium	4	.....
Ephrata	4	.....
Erie	2	1.0
Harrisburg	4	*
Indiana	3	.....
Lock Haven	4	.....
Muncy Valley	4	.....
Parkers Landing	5	.....
Philadelphia	4	0.0
Pittsburg	4	0.0
Ridgway	5	.....
Scranton	4	.....
Selinsgrove	4	.....
Somerset	3	.....
Stroudsburg	4	.....
Warren	3	.....
Rhode Island.		
Block Island	4	0.0
Kingston	6	.....
Narragansett Pier	6	.....
Providence	4	0.0
South Dakota.		
Huron	3	22.0
Pierre	1	26.0
Yankton	T.	16.0
Tennessee.		
Chattanooga	T.	0.0
Nashville	T.	.....
Utah.		
Modena	1	.....
Vermont.		
Brattleboro	6	14.0
Burlington	10	15.5
Northfield	16	.....
St. Johnsbury	12	.....
Virginia.		
Dale Enterprise	2	.....
Lincoln	3	.....
Mount Weather	3	.....
Stephens City	2	.....
Wytheville	T.	.....
Washington.		
Spokane	3	.....
West Virginia.		
Bayard	4	.....
Elkins	3	0.0
Parkersburg	2	0.0
Rowlesburg	2	.....
Wisconsin.		
Ashland	14	.....
Green Bay	T.	5.0
Koepenick	8	.....
La Crosse	0	12.0
Lakemills	5	.....
Medford	5	.....
Spooner	3	.....
Wyoming.		
Cheyenne	2	.....
Lander	8	.....
Yellowstone Park	18	.....

*Floating ice. †Shore ice. T. indicates trace.

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W377S

U. S. DEPARTMENT OF AGRICULTURE,
WEATHER BUREAU.

SNOW AND ICE BULLETIN.

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Willis L. Moore, Chief U. S. Weather Bureau.

3" 3" 6"
2" 22" 8" 9"
6" 14" 17"
6" 14" 11" 7"
19" 9" 20"
2" 27" 29" 12"
17" 36" 3"
18"
1" 5" 3"
T T T
2" 23" 5"
16" 3"
3" T
Trace
9" 6"
3" 25" 17"
9" 6" 7" 14"
6" 18" 20" 3"
3"
Trace
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So far as practicable all reports of snow and ice are printed in the table.

WASHINGTON, D. C., *February 28, 1911.*

DEPTH OF SNOW.

Only light local snows occurred during the week in the districts east of the Rocky Mountains, and the moderate weather was instrumental in carrying off a large portion of that remaining on the ground at the end of the preceding week.

The generally heavy snow covering over Kansas and Missouri, and portions of surrounding States mentioned last week, has practically disappeared, as well as a considerable amount that covered the Ohio Valley and portions of the Middle Atlantic States.

Over the northern districts from the Dakotas eastward there has been a general reduction in the depth of the snow covering, ranging from 1 to 2 inches in the southern portions to 6 inches or more over the districts along the northern border.

In the Rocky Mountains and portions of the Plateau regions there appears to have been considerable snow, especially during the latter part of the week, and snow is prevailing at this writing over much of the southern Rocky Mountain and Plateau regions.

Considerable snow now covers the ground at the lower elevations of the Rocky Mountain districts, and it is probable there has been a considerable accumulation in the higher elevations, thus materially improving the prospects of a sufficient supply of water for the coming irrigation season.

Fairly deep snow still covers the ground along the northern border from Montana to the upper Lakes, the depths ranging from 3 to 10 inches in Montana and the Dakotas, to as much as 30 inches in the upper portions of Michigan.

In the Atlantic Coast States only small amounts occur south of central New York, and in southern New England, but deep snow still covers the Adirondack regions of New York, and the interior and northern portions of New England.

ICE IN RIVERS AND HARBORS.

In the upper Missouri and upper Mississippi valleys moderately cold weather continued, and at a few points there was a slight increase in the amount of ice over that reported last week, and small increases were reported also from local points in the upper Lakes and northern New England; elsewhere there was a small but general reduction in the amounts of ice in the rivers and harbors as compared with last week.

The Missouri continues closed from Omaha northward, the thickness of the ice ranging from 3 inches in the lower, to 3 feet in the upper portions. The Mississippi is now open from Dubuque southward, but without change in its upper portion.

Considerable ice disappeared from the south shore of Lake Superior, and there was a general reduction in the amount in the harbors of the lower Lakes, most of those on the southern shores of both lakes Erie and Ontario being largely free of ice.

On the Hudson and its tributaries and on the rivers and lakes of New England only slight changes occurred during the week.

The following special reports have been received:

Hartford, Conn., February 28.—In the upper Connecticut Valley there has been a slight increase in the depth of snow, which now ranges from 17 inches at West Stewartstown, N. H., to 10 inches at Bellows Falls, Vt.; in the lower valley there has been a decrease, particularly in Massachusetts and Connecticut, where the depth now averages 1 inch.

Albany, N. Y., February 28.—In the Hudson Valley the depth of snow ranges from a trace at Athens to 6 inches at Glens Falls; in the Mohawk Valley it ranges from a trace at Schenectady to 5 inches at Utica. In the Hudson River the ice averages 9 inches thick, while in the Mohawk it averages 14 inches. The ice harvest is about completed, with houses about two-thirds full.

P. C. DAY, *Chief of Division.*

DEPTH OF SNOW AND THICKNESS OF ICE AT 8 P. M., FEBRUARY 27, 1911.

Stations.	Snow.	Ice in rivers, harbors, etc.
Arizona.	*Inches*	*Inches*
Flagstaff	3	.....
Colorado.		
Denver	5	.....
Durango	16	.....
Grand Junction	T.	.....
Leadville	23	.....
Pueblo	5	.....
Connecticut.		
Hartford	T.	10.0
West Cornwall	3	.....
West Simsbury	1	.....
Idaho.		
Boise	T.	.....
Pocatello	2	.....
Wallace	22	.....
Iowa.		
Des Moines	T.	3.5
Dubuque	0	*
Sioux City	0	10.0
Kansas.		
Anthony	T.	.....
Concordia	T.	.....
Dodge City	1	.....
Iola	T.	0.0
Manhattan	T.	.....
Russell	1	.....
Topeka	T.	.....
Wakeeney	T.	.....
Wallace	1	.....
Wichita	T.	.....
Maine.		
Bangor	2	20.0
Buckfield	17	.....
Cornish	18	.....
Eastport	T.	23.0
Ellsworth	10	.....
Gardiner	14	15.0
Greenville	34	26.5
Lewiston	4	22.0
Millinocket	25	.....
Orono	9	.....
Portland	3	0.0
Massachusetts.		
Adams	T.	.....
Concord	1	.....
Fitchburg	T.	.....
Mansfield	T.	.....
Nantucket	T.	0.0
Michigan.		
Alpena	1	9.5
Big Rapids	T.	.....
Cadillac	10	.....
Calumet	31	.....
Chatham	20	.....
Detroit	0	6.0
Escanaba	7	18.5
Grand Marais	29	.....
Houghton	27	12.0
Michigan—Cont'd		
Lewiston	22	.....
Mackinaw	15	.....
Mancelona	18	.....
Marquette	27	†
Port Huron	0	6.0
St. Ignace	24	.....
Sault Ste. Marie	12	20.5
Minnesota.		
Angus	17	.....
Beaulieu	13	.....
Collegeville	T.	.....
Duluth	11	30.0
Fergus Falls	4	.....
Hinckley	4	.....
Mankato	T.	.....
Milan	T.	.....
Moorhead	10	35.0
New Richland	T.	.....
Redwood Falls	T.	.....
St. Paul	0	14.0
State Sanatorium	14	.....
Virginia	7	.....
Missouri.		
Columbia	T.	.....
Kansas City	T.	0.0
St. Joseph	T.	*
Unionville	T.	.....
Montana.		
Havre	8	.....
Helena	2	.....
Kalispell	2	.....
Miles City	2	.....
Nebraska.		
Omaha	0	3.0
Nevada.		
Reno	1	.....
Winnemucca	T.	.....
New Hampshire.		
Bethlehem	8	.....
Concord	3	14.0
Hanover	8	.....
Keene	4	.....
New Jersey.		
Flemington	T.	.....
New Mexico.		
Santa Fe	T.	.....
New York.		
Albany	T.	14.0
Binghamton	T.	.....
Buffalo	T.	9.0
Canton	5	.....
Cutchogue	1	.....
De Ruyter	6	.....
Herkimer	T.	.....
Ithaca	1	.....
Lake Placid	20	.....
Le Roy	T.	.....
Malone	6	.....
New York—Cont'd		
Ogdensburg	12	.....
Oswego	4	0.0
Plattsburg	6	.....
Rochester	T.	0.0
Saranac Lake	18	.....
Setauket	T.	.....
Syracuse	2	.....
Watertown	T.	.....
Watkins	T.	.....
North Dakota.		
Bismarck	10	36.0
Devils Lake	14	.....
Williston	8	24.5
Ohio.		
Cleveland	0	*
Pennsylvania.		
Drifton	T.	.....
Emporium	T.	.....
Erie	0	*
Johnstown	T.	.....
Muncy Valley	2	.....
Selinsgrove	1	.....
Warren	1	.....
Rhode Island.		
Kingston	T.	.....
Narragansett Pier	T.	.....
Providence	T.	0.0
South Dakota.		
Huron	1	23.0
Pierre	T.	26.0
Rapid City	2	.....
Yankton	T.	14.5
Utah.		
Modena	2	.....
Salt Lake City	5	.....
Vermont.		
Brattleboro	2	13.0
Burlington	7	16.5
Northfield	11	.....
St. Johnsbury	14	.....
Washington.		
Spokane	2	.....
Wisconsin.		
Ashland	9	.....
Green Bay	0	4.0
Koepenick	9	.....
La Crosse	0	12.0
Medford	3	.....
Mount Horeb	1	.....
Sheboygan	T.	.....
Spooner	2	.....
Viroqua	1	.....
Wausau	3	.....
Wyoming.		
Cheyenne	3	.....
Lander	17	.....
Sheridan	2	.....
Yellowstone Park	19	.....

* Floating ice. † Shore ice. T. indicates trace.

U. S. DEPARTMENT OF AGRICULTURE,

WEATHER BUREAU.

SNOW AND ICE BULLETIN.

PUBLISHED BY AUTHORITY OF THE SECRETARY OF AGRICULTURE.

Willis L. Moore, Chief U. S. Weather Bureau.

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6"
9"
16"
13"
31"
30"
29"
15"
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Trace
Boise.
Pocatello
Reno
Sacramento
San Francisco
Los Angeles
Phoenix
Denver
Pueblo
Dodge City
Kansas City
Omaha
Des Moines
Minneapolis
St. Paul
Chicago
Detroit
Cleveland
Buffalo
Pittsburg
Albany
Boston
New York
Philadelphia
Washington
Richmond
Atlanta
Birmingham
Memphis
Little Rock
Oklahoma City
Dallas
Houston
New Orleans
Jacksonville
Tampa
Key West
Havana
Vicksburg
Shreveport
Galveston
Port Arthur
Corpus Christi
Brownsville
Monterrey
Mexico
Winnipeg
Prince Albert
Moose Jaw
Medicine Hat
Calgary
Edmonton
Port Arthur
Duluth
Marquette
Escanaba
Mackinaw
Port Huron
Toledo
Sault Ste. Marie
Grand Rapids
Milwaukee
Green Bay
Madison
Rochester
Syracuse
Albany
Utica
Binghamton
Scranton
Harrisburg
Pittsburg
Wheeling
Parkersburg
Charleston
Lexington
Louisville
Cincinnati
Indianapolis
Springfield
Peoria
Chicago
Davenport
Rock Island
Burlington
Keokuk
Quincy
St. Louis
Cairo
Evansville
Nashville
Chattanooga
Knoxville
Asheville
Charlotte
Columbia
Augusta
Savannah
Jacksonville
Tampa
Key West
Mobile
Montgomery
Meridian
Vicksburg
New Orleans
Shreveport
Galveston
Houston
Port Arthur
Corpus Christi
Brownsville
Monterrey
Mexico
Havana
Nassau
Bermuda
Hatteras
Cape Henry
Norfolk
Wilmington
Charleston
Savannah
Jacksonville
Tampa
Key West

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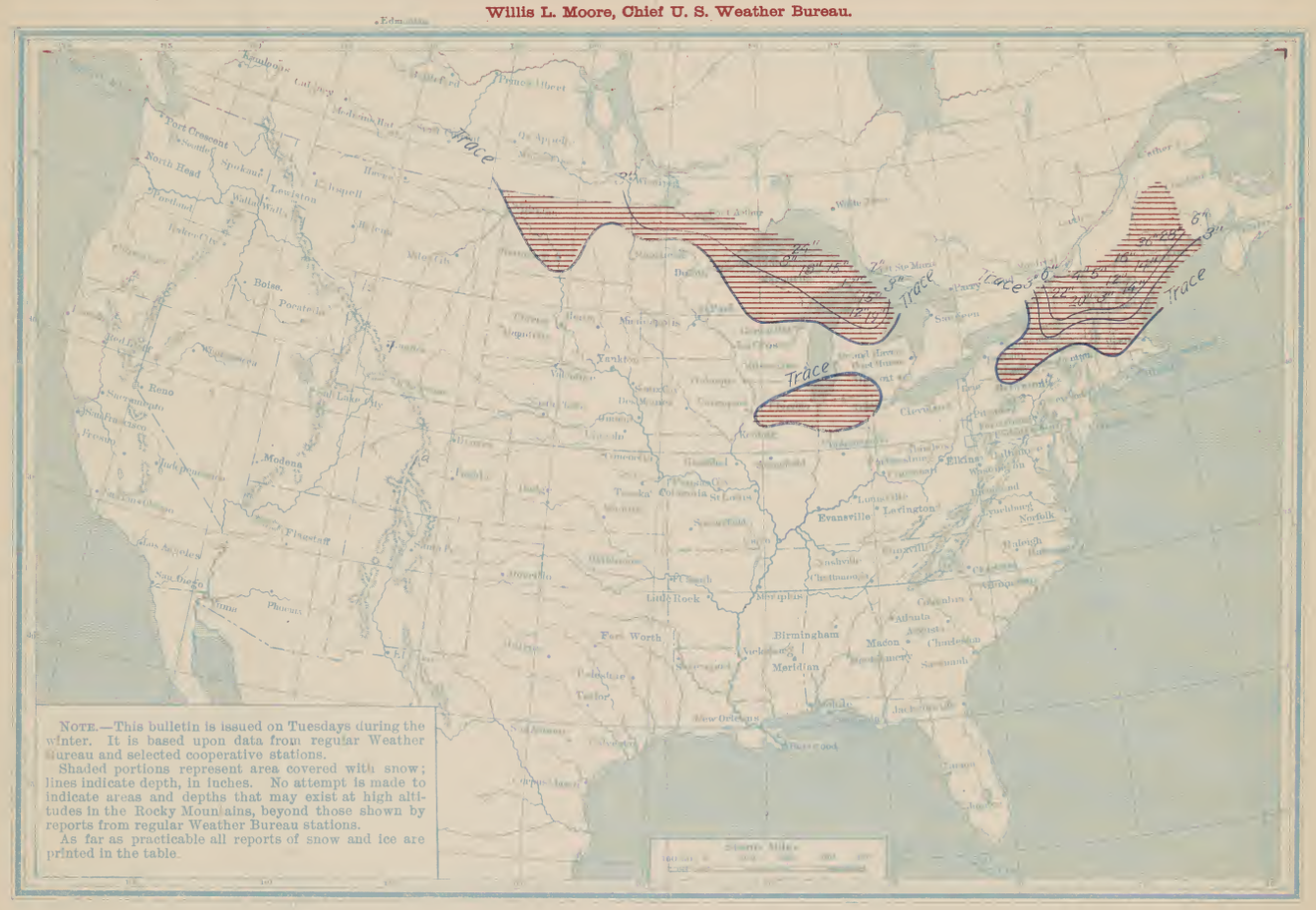
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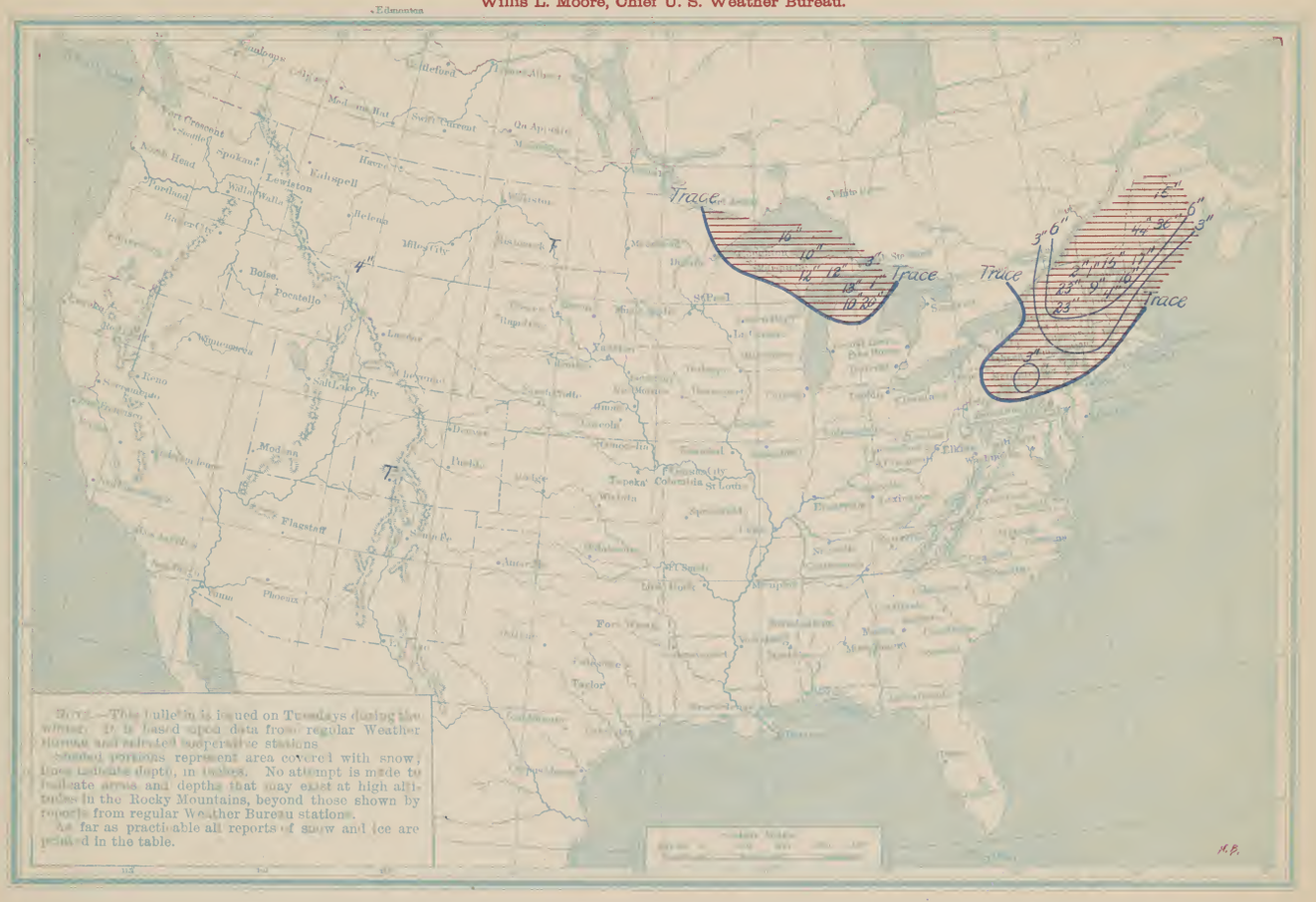
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NOTE.—This bulletin is issued on Tuesdays during the winter. It is based upon data from regular Weather Bureau and selected cooperative stations.
Shaded portions represent area covered with snow; lines indicate depth, in inches. No attempt is made to indicate areas and depths that may exist at high altitudes in the Rocky Mountains, beyond those shown by reports from regular Weather Bureau stations.
As far as practicable all reports of snow and ice are printed in the table.

WASHINGTON, D. C., *March 21, 1911.*

DEPTH OF SNOW.

The severe storms that passed over the Lake region, north Atlantic States, and New England during Wednesday and Thursday of the past week added several inches of snow to that already on the ground in those districts, and some light falls again occurred in portions of the Lake region and New England during Saturday and Monday. As a result of these additions there is now from 2 to 8 inches more snow on the ground from northern New York northeastward over New England than was reported one week ago.

Elsewhere throughout the United States there appears to have been no snowfall during the week, and the area covered with snow has diminished accordingly.

In the mountain regions of the West the day temperatures during the week appear to have been sufficiently high to cause a considerable settling of the snow, the depth in the Yellowstone Park having diminished about 1 foot during the week; but the cool nights have doubtless prevented any decided run-off, so that the amount of water stored in the high mountains has probably not materially decreased during the week. Reports from the mountain regions of the West to the end of February continue to indicate the probabilities of a good supply of water for irrigation in those districts during the coming summer. Much snow appears to have fallen during the latter part of February, especially over the high elevations of the southern portions, including Arizona, Utah, Colorado, and New Mexico; and, with comparatively heavy rains over the lower levels, the outlook for a normal supply of water is now most encouraging.

Over the more northern districts there was, as a rule, no large increase in the snow depth, but generally cool weather prevented any decided reductions in the amounts stored in the higher elevations, and the indications point to a normal flow of water during the coming summer. In California there was a moderate fall of snow in the mountains during February, which, added to the phenomenal fall of January, produced a heavy covering of snow, and a correspondingly abundant supply of water for irrigation is now assured.

ICE IN RIVERS AND HARBORS.

The continuation of generally cold weather over the northern districts during the greater part of the week prevented any marked change in the ice conditions in the rivers and lakes of those regions.

The Missouri River is still closed at Bismarck, N. Dak., but below that point it appears to be open. The ice in the Red River of the North still remains intact, no change in the thickness having occurred during the week.

In the upper Lakes the conditions have changed but slightly during the week, the harbors of Lake Superior and those of the northern portions of Lakes Michigan and Huron still remaining closed, with ice ranging from 10 inches to more than 2 feet in thickness. Some additional ice formed in portions of the lower Lakes, but the harbors are generally free of ice, except at the eastern end of Lake Erie.

Heavy ice still covers most of the rivers and lakes of New England and but slight changes in thickness occurred there during the week.

DEPTH OF SNOW AND THICKNESS OF ICE AT 8 P. M., MARCH 20, 1911.

Stations.	Snow.	Ice in rivers, harbors, etc.	Stations.	Snow.	Ice in rivers, harbors, etc.	Stations.	Snow.	Ice in rivers, harbors, etc.
Colorado.	*Inches*	*Inches*	*Michigan*—Cont'd	*Inches*	*Inches*	*New York*—Cont'd	*Inches*	*Inches*
Durango	T.	.....	Lewiston	20	.....	Le Roy	T.	.....
Connecticut.			Mackinaw	13	.....	Ogdensburg	3	.....
West Cornwall	4	.....	Mancelona	10	.....	Plattsburg	2	.....
West Simsbury	2	.....	Marquette	10	†	Port Jervis	T.	.....
Maine.			Newberry	12	.....	Saranac Lake	23	.....
Bangor	6	23.0	Onaway	1	.....	Saratoga Springs	6	.....
Buckfield	17	.....	Rock	12	.....	Syracuse	T.	.....
Cornish	16	.....	St. Ignace	9	.....	Watkins	T.	.....
Eastport	2	20.0	Sault Ste. Marie	3	22.0	*North Dakota.*		
Gardiner	14	14.0	*Minnesota.*			Bismarck	T.	20.0
Greenville	44	32.0	Duluth	T.	26.0	*Pennsylvania.*		
Lewiston	2	23.0	Moorhead	0	35.0	Drifton	4	.....
Millinocket	36	.....	*New Hampshire.*			Emporium	T.	.....
Orono	9	.....	Bethlehem	13	.....	Erie	0	†
Portland	2	0.0	Concord	5	12.0	Lock Haven	1	.....
Presque Isle	15	.....	Keene	8	.....	Muncy Valley	3	.....
Massachusetts.			*New Jersey.*			Scranton	T.	.....
Adams	8	.....	Belvidere	T.	.....	Selinsgrove	2	.....
Amherst	4	.....	Charlotteburg	T.	.....	*South Dakota.*		
Fitchburg	1	.....	*New York.*			Huron	0	*
Michigan.			Albany	1	0.0	*Vermont.*		
Alpena	T.	10.0	Big Moose	23	.....	Brattleboro	4	12.0
Calumet	16	.....	Binghamton	T.	.....	Burlington	1	18.5
Chatham	8	.....	Buffalo	0	7.5	Northfield	9	.....
Detroit	0	2.5	Canton	1	.....	St. Johnsbury	15	.....
Escanaba	1	19.0	Herkimer	2	.....	*Wyoming.*		
Houghton	T.	11.0	Ithaca	T.	.....	Yellowstone Park	4	.....

* Floating ice. † Shore ice. T. indicates trace.

Compared with last year at the same date there is now generally more ice in the upper Lake region and decidedly more in the rivers and lakes of New England. In the Red River of the North at Moorhead, Minn., there was no ice at this period last year, while at this writing the river at that point is still heavily ice bound, and similar conditions exist in the Missouri River at Bismarck, N. Dak.

The following special reports have been received; that from Detroit relates to the conditions existing throughout the Great Lakes and is a summary of a large number of reports collected at that station:

Hartford, Conn., March 21.—In the Connecticut Valley the depth of snow has increased, and now averages 15 inches in the extreme upper portion and 4 inches elsewhere. In the Connecticut River the ice conditions are unchanged.

Albany, N. Y., March 21.—Incomplete reports show about 4 inches of snow in the Hudson Valley, and about 3 inches in the Mohawk. The Hudson River is open south of Troy, while in the Mohawk the ice averages about 8 inches thick.

Detroit, Mich., March 21.—In Lake Superior there are large floating fields of ice in the central and eastern portions. In Green Bay, Lake Michigan, and the Straits of Mackinac the conditions are unchanged. In Lake Huron a few fields are reported, while in Lake Erie the ice is confined to the eastern portion. In Lake Ontario heavy ice in the extreme northeastern portion continues.

P. C. DAY, *Chief of Division.*

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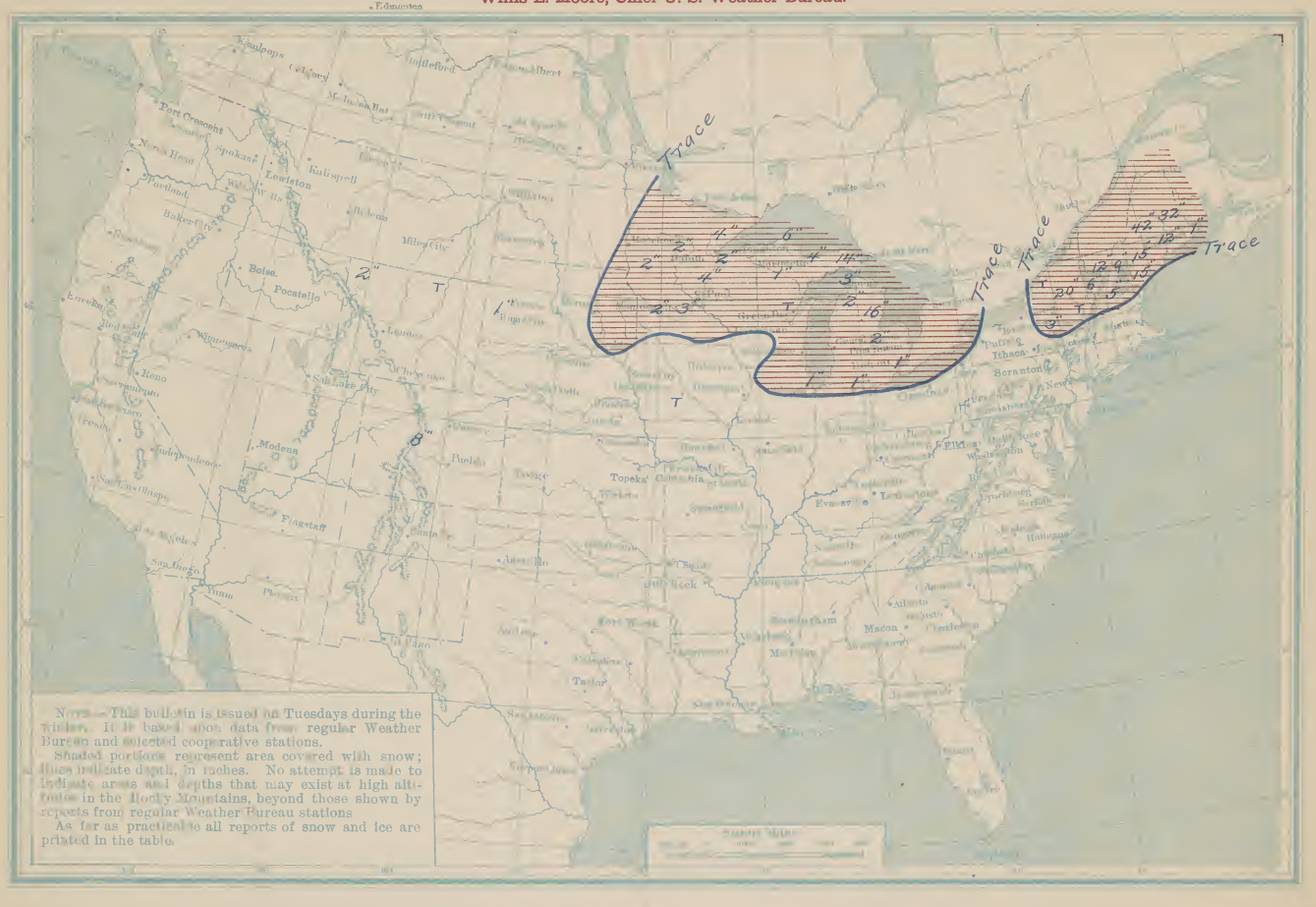
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As far as practicable all reports of snow and ice are printed in the table.

WASHINGTON, D. C., *March 28, 1911.*

DEPTH OF SNOW.

Some snow occurred in the Lake region and New England during the 22d and 23d in connection with a general storm that moved eastward over those districts on the dates mentioned, and again at the end of the week some snow occurred in the middle Missouri and upper Mississippi valleys and over the upper Lakes; and at this writing snow still continues in the last-named district and has extended to the lower Lakes and New England.

Some slight increases in the snow depth occurred during the week in portions of the Lake region, and locally in New England, and small amounts cover the ground in portions of the Missouri and upper Mississippi valleys and lower Lake region that were bare a week ago. A considerable amount of snow still covers the ground in the interior and northern portions of New England, the greatest depth reported being 3½ feet in central Maine.

In the upper Lake region there is considerable snow in the northern portions of Michigan, and a heavy covering still remains in the elevated portions of the Adirondack region of northern New York.

In the mountain regions of the West only small amounts of snow occurred, and the depths reported on the ground indicate but a slight reduction during the week. Moderately cool weather has probably prevented a rapid melting of the snow in the high mountain districts and no material loss has been experienced from runoff. The prospects continue bright for a good supply of water during the coming season over most of the irrigated districts.

ICE IN RIVERS AND HARBORS.

Moderately cold weather over much of New England during portions of the week prevented any marked change in the ice conditions over the rivers and lakes of that region, and they still remain largely ice bound; in fact there was some increase in thickness over that reported last week from points in the interior of Maine.

In the Missouri River the ice at Bismarck moved out, and farther north it is reported as breaking up, so that the river appears to be open throughout most of its course. The ice in the Red River of the North still holds without change, the thickness at Moorhead, 35 inches, being the same as reported last week.

In Lake Superior the ice has largely disappeared from the harbors, but at the Soo it continues solid, with a thickness of nearly 2 feet. Most of the ice remaining last week in the harbors of the northern portions of Lakes Michigan and Huron moved out, although in some of the protected bays it still remains without material change. In the lower lakes the harbors are all free of ice, except at the eastern end of Lake Erie. The Hudson is open throughout most of its course and the ice is breaking up in its main tributaries.

The following special reports have been received; that from Detroit relates to the conditions existing throughout the Great Lakes and is a summary of a large number of reports collected at that station:

Gardiner, Me., March 27.—Mild weather and rain have reduced the depth of snow to 8 inches and the thickness of ice to 12 inches.

Brattleboro, Vt., March 27.—Some snow remains back on the hills.

Hartford, Conn., March 28.—In the Connecticut Valley the depth of snow has decreased materially, except in the extreme upper portion, where it has increased to 2 feet; the ground is bare south of Brattleboro, Vt. In the upper Connecticut River the ice started over the Holyoke dam at 2 a. m. to-day, but a flood stage is not anticipated.

Albany, N. Y., March 28.—In the Mohawk Valley no snow remains; in the Hudson Valley only a trace remains at Corinth and Thurman, but the depths range from 3 to 9 inches in the Sacandaga and West Canada valleys. The Hudson River is open south of Mechanicsville, while the Mohawk is open only in places.

Detroit, Mich., March 28.—In Lake Superior there are ice fields in the northern and eastern portions. The ice in St. Marys River remains solid, but is softening. In Green Bay the ice is broken. In Lake Michigan the fields are confined to the extreme northern portion. In the Straits of Mackinac the ice is soft and partially broken. In Lake Huron there are fields along the east shore, but the ice in Georgian Bay is solid. In Lake Erie there are fields in the extreme eastern end, while in Lake Ontario the ice is confined to the extreme northeastern portion.

Williston, N. Dak., March 23.—The ice in the Missouri River here is breaking up.

P. C. DAY, *Chief of Division.*

NOTE.—This will be the last bulletin of this series for the season of 1910–11.

DEPTH OF SNOW AND THICKNESS OF ICE AT 8 P. M., MARCH 27, 1911.

Stations.	Snow.	Ice in rivers, harbors, etc.	Stations.	Snow.	Ice in rivers, harbors, etc.	Stations.	Snow.	Ice in rivers, harbors, etc.
Colorado.	*Inches*	*Inches*	*Michigan*—Cont'd	*Inches*	*Inches*	*New York.*	*Inches*	*Inches*
Leadville	8	.....	Grand Marais	14	.....	Beaver River	20	.....
Connecticut.			Grand Rapids	T.	.....	Buffalo	0	6.0
Hartford	0	*	Houghton	3	1.0	Canton	T.	.....
Illinois.			Iron River	1	.....	De Ruyter	3	.....
Chicago	1	.....	Lansing	T.	.....	Ogdensburg	T.	.....
Dwight	T.	.....	Lewiston	16	.....	*Ohio.*		
La Salle	T.	0.0	Mancelona	2	.....	Cleveland	T.	0.0
Indiana.			Marquette	4	0.0	Sandusky	1	0.0
Winona Lake	1	.....	Saginaw	2	.....	Toledo	T.	0.0
Iowa.			St. Ignace	3	.....	*Pennsylvania.*		
Davenport	T.	0.0	Sault Ste. Marie	T.	22.0	Erie	T.	0.0
Des Moines	T.	0.0	*Minnesota.*			*South Dakota.*		
Iowa City	T.	.....	Collegeville	1	.....	Huron	T.	0.0
Maine.			Duluth	2	0.0	Rapid City	1	.....
Bangor	3	23.0	Fergus Falls	2	.....	Yankton	T.	0.0
Buckfield	15	.....	Fort Ripley	1	.....	*Vermont.*		
Cornish	15	.....	Glencoe	1	.....	Brattleboro	0	8.0
Eastport	1	19.0	Grand Meadow	1	.....	Burlington	0	17.0
Gardiner	8	12.0	Hinckley	4	.....	Northfield	6	.....
Greenville	42	34.0	Mankato	T.	.....	St. Johnsbury	12	.....
Lewiston	T.	24.0	Milan	T.	.....	*Wisconsin.*		
Millinocket	32	.....	Minneapolis	3	.....	Green Bay	T.	0.0
Orono	12	.....	Moorhead	T.	35.0	Koepenick	1	.....
Portland	T.	0.0	New Richland	T.	.....	La Crosse	T.	0.0
Massachusetts.			Redwood Falls	2	.....	Milwaukee	T.	0.0
Adams	T.	.....	Reeds	1	.....	New London	T.	.....
Michigan.			St. Paul	T.	0.0	Wausau	T.	.....
Alpena	T.	*	State Sanatorium	2	.....	*Wyoming.*		
Calumet	6	.....	Virginia	4	.....	Sheridan	T.	.....
Chatham	4	.....	*New Hampshire.*			Yellowstone Park	2	.....
Detroit	1	0.0	Bethlehem	9	.....			
Escanaba	T.	15.5	Concord	T.	12.0			
Grand Haven	T.	0.0	Hanover	5	.....			
			Keene	T.	.....			

* Floating ice. † Shore ice. T. indicates trace.